

# Service Manual

DIGITAL PROPRIETARY TELEPHONE  
FOR DIGITAL SUPER HYBRID SYSTEM

## KX-T7433C

White Version

## KX-T7433C-B

Black Version

(for Canada)



### ■ SPECIFICATIONS

Station Loop Limit:	40 ohms
Cabling Method:	2 pair wire
Jacks:	Main unit, Handset/Headset, Telephone
Display:	16 digits (max.)
Dimensions:	208 (W)×105 (H)×232 (D) mm with handset
Weight:	1.03 kg

Design and specifications are subject to change without notice.

### WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

# Panasonic



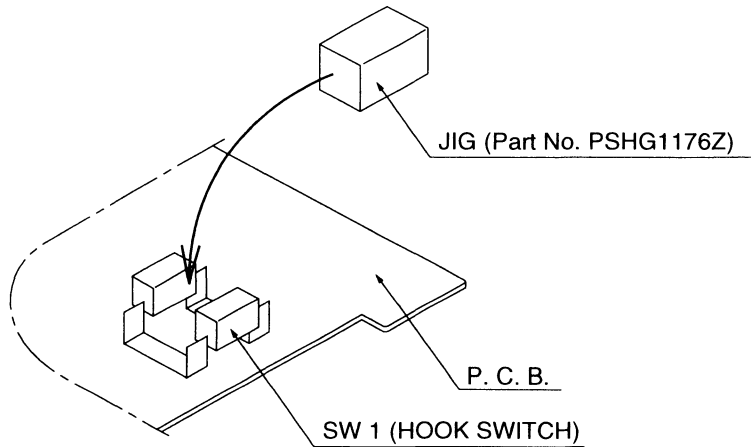
When you note the serial number, write down all of the 11 digits. The serial number may be found on the label affixed to the bottom of the unit.

TABLE OF CONTENTS

	Page		Page
FOR SERVICE TECHNICIANS .....	2	HOW TO REPLACE THE FLAT PACKAGE IC .....	30
LOCATION OF CONTROLS .....	3	PRINTED CIRCUIT BOARD .....	33, 40
DISASSEMBLY INSTRUCTIONS .....	4	WAVEFORM .....	35
IC DATA .....	6	SCHEMATIC DIAGRAM .....	39
BLOCK DIAGRAM .....	11	CABINET AND ELECTRICAL PARTS LOCATION ...	41
CIRCUIT OPERATIONS .....	12	ACCESSORIES AND PACKING MATERIALS .....	42
TROUBLESHOOTING GUIDE .....	24	REPLACEMENT PARTS LIST .....	43
TERMINAL GUIDE OF IC'S TRANSISTORS, AND DIODES .....	29		

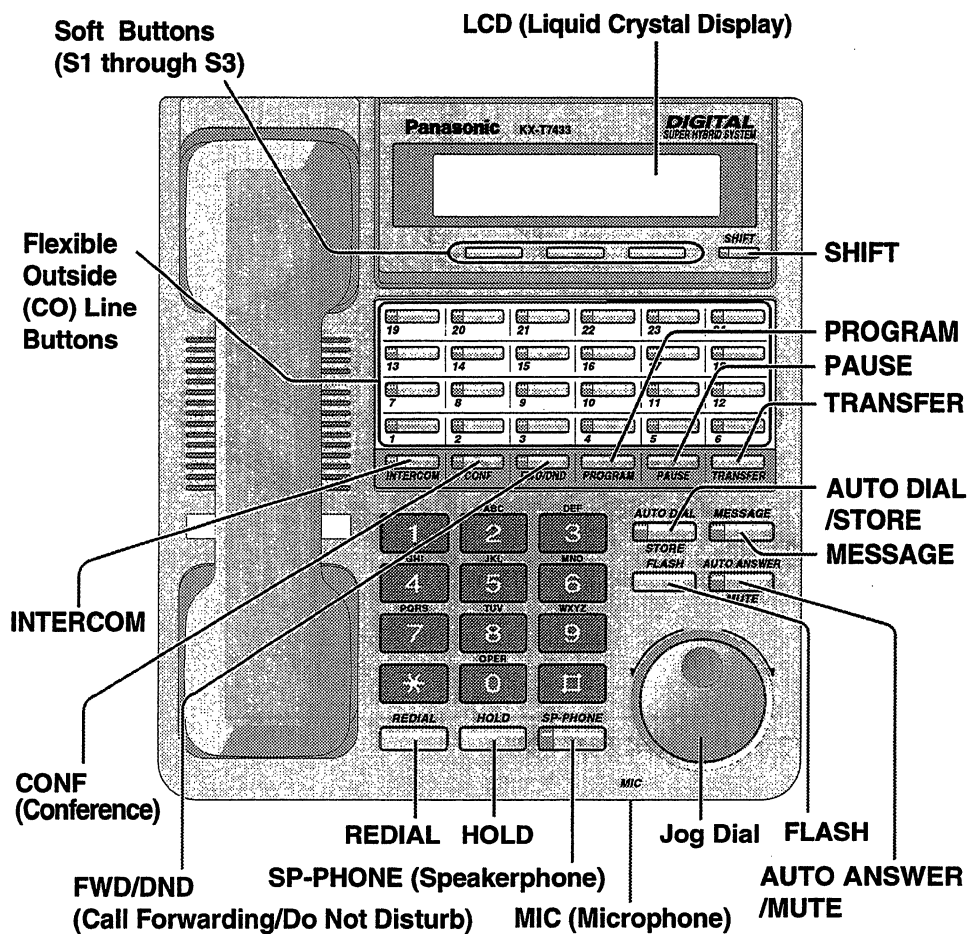
FOR SERVICE TECHNICIANS

- 1. Note the following items when exchanging the LEDs (Ref. No. D100-130, D201) of Dial P.C. Board.
  - 1) Do not reuse a LED which is removed from the P.C. Board.
  - 2) Use a soldering iron (less than 15 W) for exchanging LED.
  - 3) Do not heat the LED for more than 2 seconds.
  - 4) Do not move the LED after soldering.
- 2. This unit employs the switch which is influenced by the light for the hook switch. When you open the cabinet to repair the unit in the bright light, the hook switch might work improperly. Therefore, take care not to shine the hook switch directly, or use the jig as shown below.



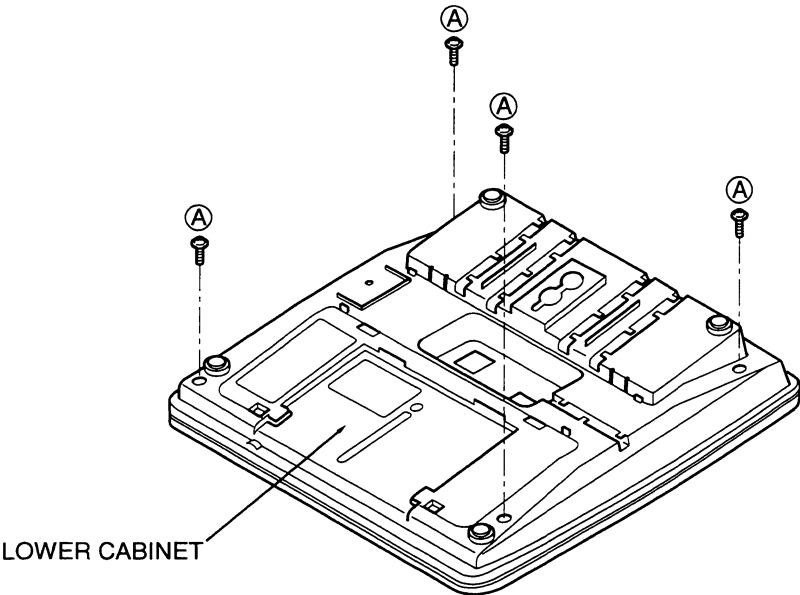
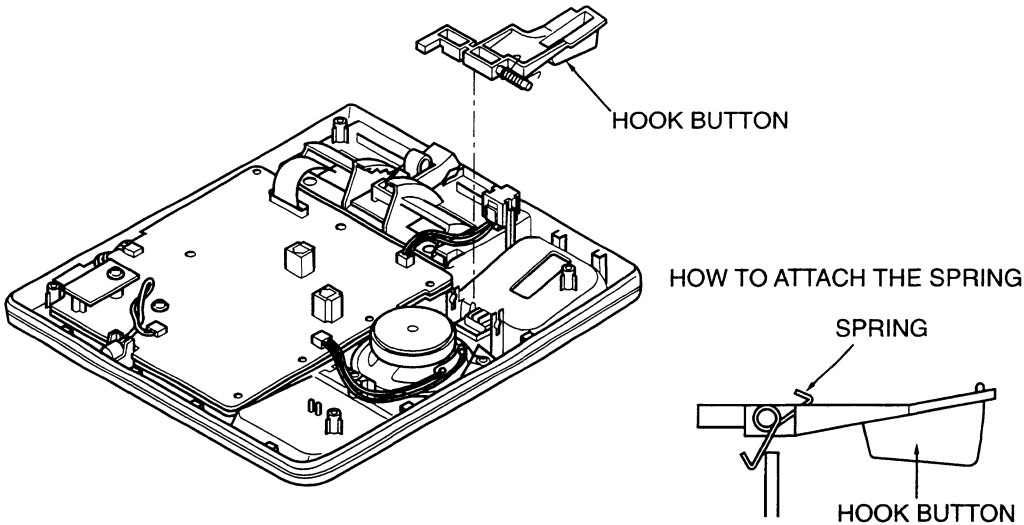


# LOCATION OF CONTROLS





## DISASSEMBLY INSTRUCTIONS

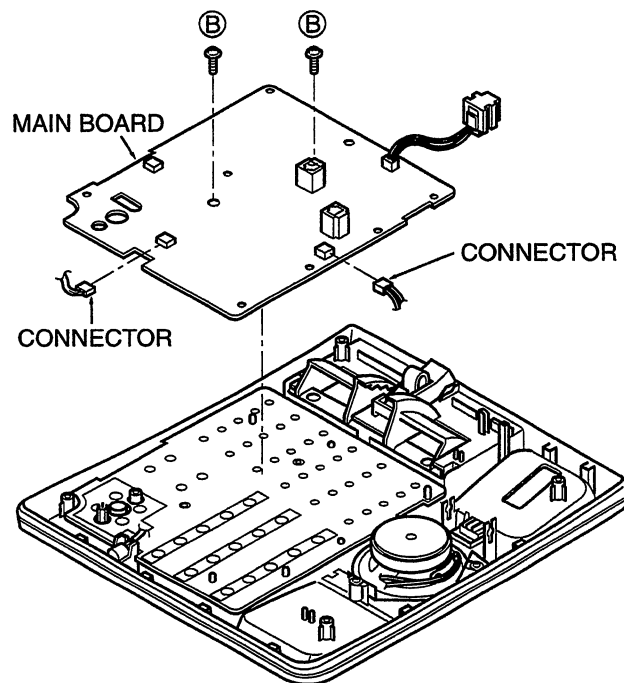
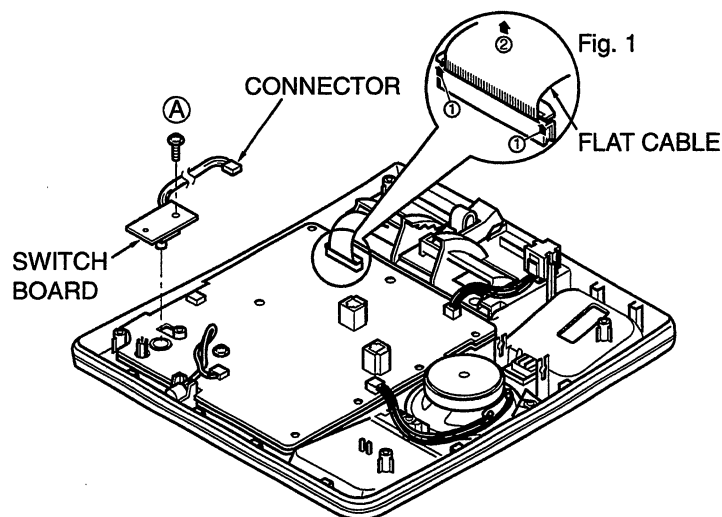
No. 1	<b>HOW TO REMOVE THE LOWER CABINET</b>
Procedure 1	<ol style="list-style-type: none"> <li>1) Remove the 4 screws (A).</li> <li>2) Remove the lower cabinet.</li> </ol>
	 <p>Diagram illustrating the removal of the lower cabinet. Four screws (A) are shown being removed from the bottom of the device. The lower cabinet is shown being lifted away from the main unit.</p>
No. 2	<b>HOW TO REMOVE THE HOOK BUTTON</b>
Procedure 1→2	<ol style="list-style-type: none"> <li>1) Remove the hook button.</li> </ol>
	 <p>Diagram illustrating the removal of the hook button. The hook button is shown being removed from the main unit. A detailed view shows how to attach the spring to the hook button.</p>



### No. 3 HOW TO REMOVE THE SWITCH AND MAIN BOARDS

#### Procedure 1→2→3

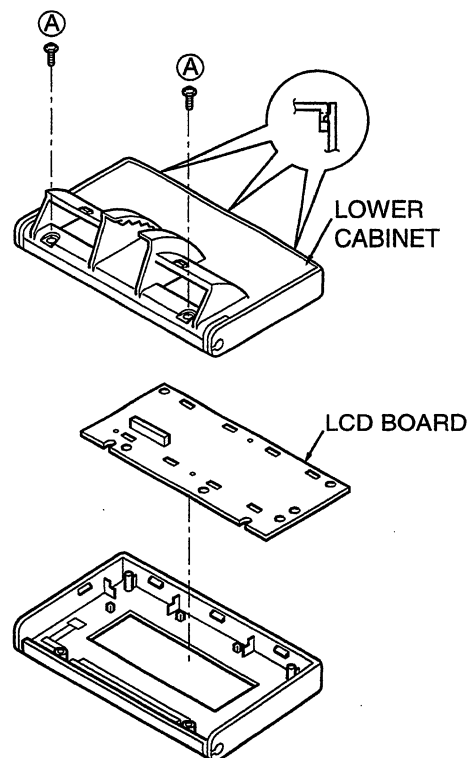
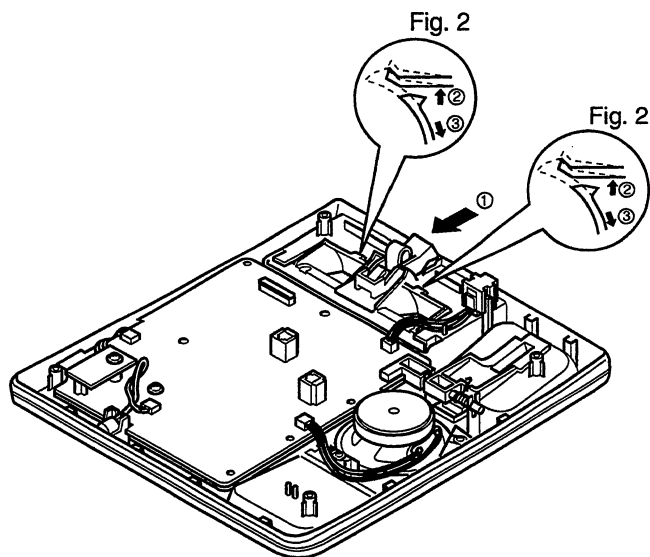
- 1) Remove the screw (A).
- 2) Pull out the switch board connector.
- 3) Remove the switch board.
- 4) Pull out the flat cable. (See Fig. 1)
- 5) Remove the 2 screws (B).
- 6) Pull out the speaker and microphone connectors.
- 7) Remove the main board.



### No. 4 HOW TO REMOVE THE LCD BOARD

#### Procedure 1→4

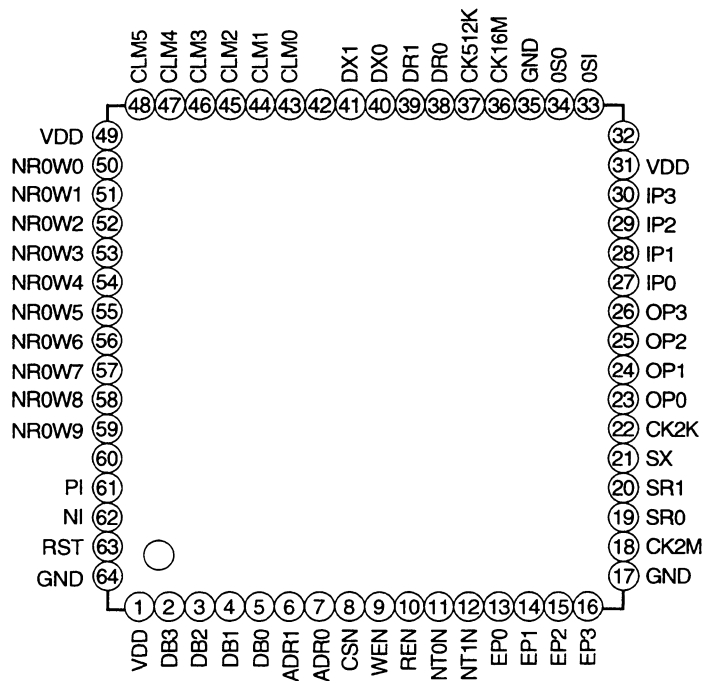
- 1) Pull out the flat cable. (See Fig. 1)
- 2) Remove the LCD block. (See Fig. 2)
- 3) Remove the 2 screws (A).
- 4) Remove the lower cabinet.
- 5) Remove the LCD board.





IC DATA

1. IC1



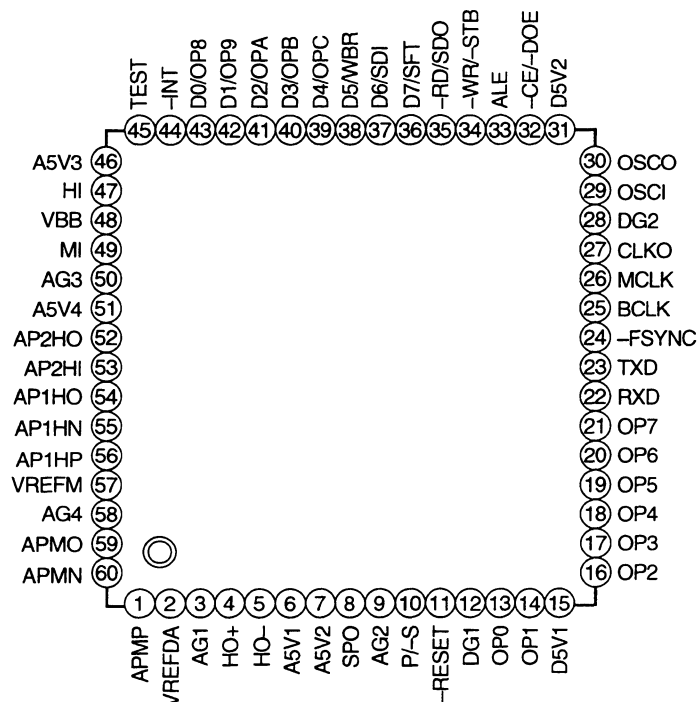
Name	Pin	Dir.	Pull Up	Type	Io	Act.	Block	MHz	Descriptions
DB3	2	bidir	---	TTL	8.0mA	high	PT5B03	2.0	Data Bus [3]
DB2	3	bidir	---	TTL	8.0mA	high	PT5B03	2.0	Data Bus [2]
DB1	4	bidir	---	TTL	8.0mA	high	PT5B03	2.0	Data Bus [1]
DB0	5	bidir	---	TTL	8.0mA	high	PT5B03	2.0	Data Bus [0]
ADR1	6	input	12-38k	TTL	---	high	PT5D01U	2.0	Address Bus [1]
ADR0	7	input	12-38k	TTL	---	high	PT5D01U	2.0	Address Bus [0]
CSN	8	input	---	TTL	---	low	PT5D01	1.0	Chip Select
REN	10	input	12-38k	TTL	---	low	PT5D01U	2.0	Read Enable Command
WEN	9	input	12-38k	TTL	---	low	PT5D01U	2.0	Write Enable Command
RST	63	input	---	CMOS schmidt	---	high	PC5D21	0.01	Asynchronous Reset Input
INT0N	11	output	---	CMOS	2.0mA	low	PC5O01	0.01	Interrupt Request
INT1N	12	output	---	CMOS	2.0mA	low	PC5O01	0.01	Interrupt Request
DR0	38	input	---	CMOS	---	low	PC5D01	0.6	Dpits Receive Data [1]
DR1	39	input	---	CMOS	---	low	PC5D01	0.6	Dpits Receive Data [0]
DX0	40	output	---	CMOS	4.0mA	low	PC5O02	0.6	Dpits Transmit Data [1]
DX1	41	output	---	CMOS	4.0mA	low	PC5O02	0.6	Dpits Transmit Data [0]
CK512K	37	output	---	CMOS	2.0mA	high	PC5O01	0.6	Dpits Bit Rate Clock
SR0	19	input	12-38k	TTL	---	high	PT5D01U	0.1	Serial Receive Data Stream [0]
SR1	20	input	12-38k	TTL	---	high	PT5D01U	0.1	Serial Receive Data Stream [1]
SX	21	output	---	CMOS	4.0mA	high	PC5O02	0.1	Serial Transmit Data Stream
CK2M	18	output	---	CMOS	4.0mA	high	PC5O02	2.1	Serial Stream Clock
EP0	13	output	---	CMOS	2.0mA	high	PC5O01	0.01	External Channel Pulse [0]
EP1	14	output	---	CMOS	2.0mA	high	PC5O01	0.01	External Channel Pulse [1]
EP2	15	output	---	CMOS	2.0mA	high	PC5O01	0.01	External Channel Pulse [2]



Name	Pin	Dir.	Pull Up	Type	Io	Act.	Block	MHz	Descriptions
EP3	16	output	---	CMOS	2.0mA	high	PC5O01	0.01	External Channel Pulse [3]
PI	61	input	---	CMOS schmidt	---	high	PC5D21	0.01	Rotary Encoder Input [Pos]
NI	62	input	---	CMOS schmidt	---	high	PC5D21	0.01	Rotary Encoder Input [Neg]
CLM0	43	output	---	CMOS	4.0mA	high	PC5O02	0.01	LED Column Drive [0]
CLM1	44	output	---	CMOS	4.0mA	high	PC5O02	0.01	LED Column Drive [1]
CLM2	45	output	---	CMOS	4.0mA	high	PC5O02	0.01	LED Column Drive [2]
CLM3	46	output	---	CMOS	4.0mA	high	PC5O02	0.01	LED Column Drive [3]
CLM4	47	output	---	CMOS	4.0mA	high	PC5O02	0.01	LED Column Drive [4]
CLM5	48	output	---	CMOS	4.0mA	high	PC5O02	0.01	LED Column Drive [5]
NROW0	50	output	---	CMOS	4.0mA	low	PC5O02	0.01	LED Row Drive [0]
NROW1	51	output	---	CMOS	4.0mA	low	PC5O02	0.01	LED Row Drive [1]
NROW2	52	output	---	CMOS	4.0mA	low	PC5O02	0.01	LED Row Drive [2]
NROW3	53	output	---	CMOS	4.0mA	low	PC5O02	0.01	LED Row Drive [3]
NROW4	54	output	---	CMOS	4.0mA	low	PC5O02	0.01	LED Row Drive [4]
NROW5	55	output	---	CMOS	4.0mA	low	PC5O02	0.01	LED Row Drive [5]
NROW6	56	output	---	CMOS	4.0mA	low	PC5O02	0.01	LED Row Drive [6]
NROW7	57	output	---	CMOS	4.0mA	low	PC5O02	0.01	LED Row Drive [7]
NROW8	58	output	---	CMOS	4.0mA	low	PC5O02	0.01	LED Row Drive [8]
NROW9	59	output	---	CMOS	4.0mA	low	PC5O02	0.01	LED Row Drive [9]
IP0	27	input	12-38k	CMOS	---	high	PC5D01U	0.01	Input Port [0]
IP1	28	input	12-38k	CMOS	---	high	PC5D01U	0.01	Input Port [1]
IP2	29	input	12-38k	CMOS	---	high	PC5D01U	0.01	Input Port [2]
IP3	30	input	12-38k	CMOS	---	high	PC5D01U	0.01	Input Port [3]
OP0	23	output		CMOS	4.0mA	high	PC5O02	0.01	Output Port [0]
OP1	24	output		CMOS	4.0mA	high	PC5O02	0.01	Output Port [1]
OP2	25	output		CMOS	4.0mA	high	PC5O02	0.01	Output Port [2]
OP3	26	output		CMOS	4.0mA	high	PC5O02	0.01	Output Port [3]
CK2K	22	output		CMOS	4.0mA	high	PC5O02	0.20	2kHz Clock Output (duty 25%)
CK16M	36	output	---	CMOS	2.0mA	high	PC5O01	16.4	Master Clock Out
OSI	33	input	---	Analog	---	---	PC5X02	16.4	X'tal In (XIN)
OSO	34	output	---	Analog	---	---	PC5X02	16.4	X'tal Out (XOUT)
N.C.	32								not used
N.C.	42								not used
N.C.	60								not used
VDD1	1	vdd							Vdd (5V)
VDD2	31	vdd							Vdd (5V)
VDD3	49	vdd							Vdd (5V)
VSS1	17	vss							Vss (GND)
VSS2	35	vss							Vss (GND)
VSS3	64	vss							Vss (GND)



## 2. IC2



Name	NO.	I/O	Classification	Function
APMP	1	Analog input	Analog	Non-inverting input terminal of microphone amplifier M1. Connect to the microphone.
VREFDA	2	---	Power supply, etc.	Reference voltage terminal of DAC. Connect the capacitor of 40 $\mu$ F between this terminal and pin 9(AG2).
AG1	3			Ground terminal of the analog circuit.
HO+	4	Analog output	Analog	Output terminal for the handset receiver. HO+ terminal and HO- terminal are biased to Vdd/2 voltage. HO- terminal is the inverse porality output terminal for pin 4 (HO+). Connect the capacitor in series between the handset and these terminals to cut the DC . Use the nonpolar type capacitor.
HO-	5			
A5V1	6	---	Power supply, etc.	5V power supply terminal of analog circuit.
A5V2	7			
SPO	8	Analog output	Analog	Output terminal for the speaker amplifier. Connect to the external speaker amplifier input terminal. SPO terminal is biased to Vdd/2 voltage. Connect the capacitor of 0.1 $\mu$ F in series between the external speaker amplifier input terminal and this terminal.
AG2	9	---	Power supply, etc.	Ground terminal of the analog circuit.
P/-S	10	CMOS input	Micro-computer interface	Mode selection terminal of microcomputer interface. Inputting "0" selects the serial mode, and "1" selects the parallel mode.
-RESET	11			System reset terminal. The system is reset when "0" is pressed.
DG1	12	---	Power Supply, etc.	Ground terminal of the digital circuit.



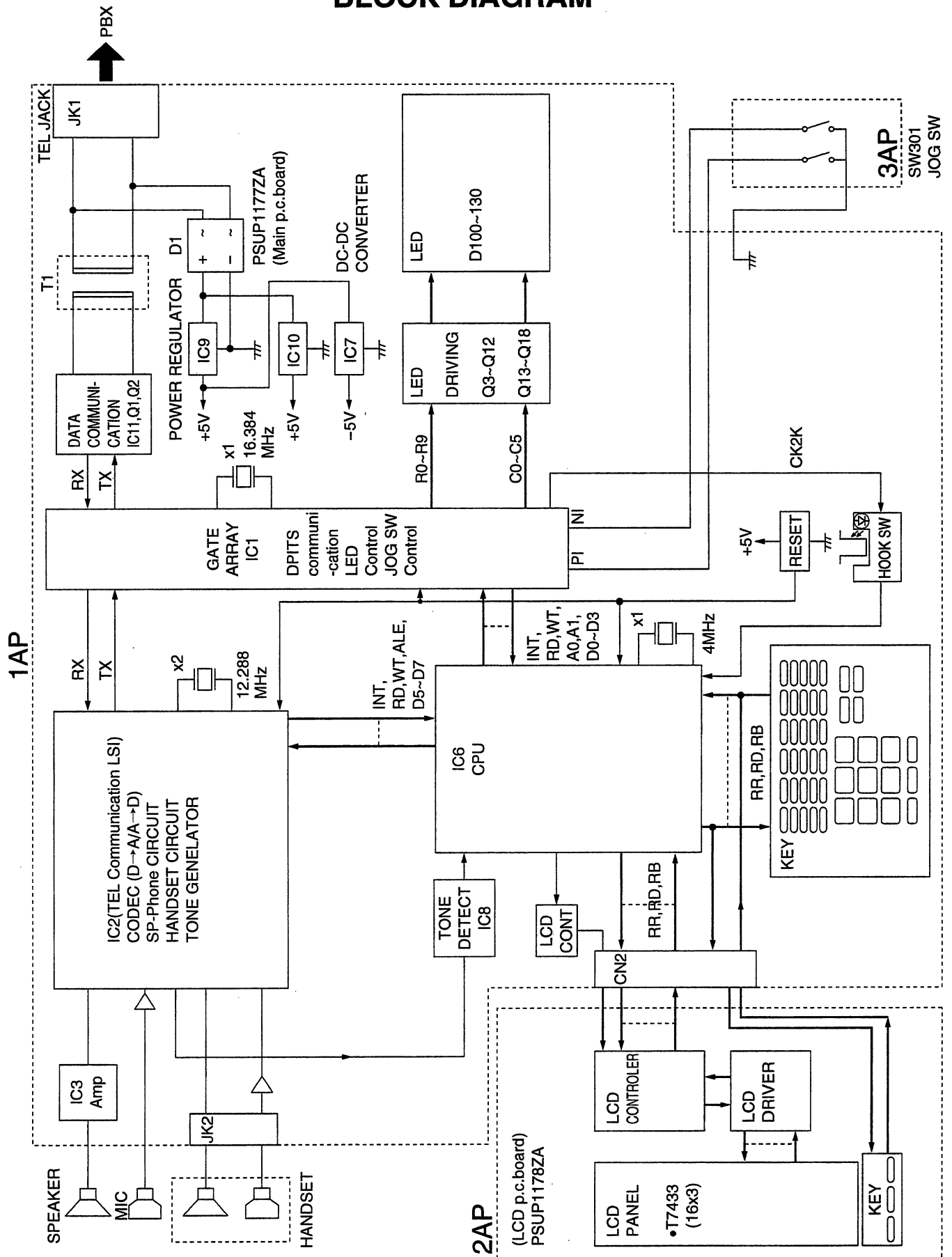
Name	NO.	I/O	Classification	Function
OP0	13	3 states output	Output port	Outputs BIT0 signal of OPORT1 resistor.
OP1	14			Outputs BIT1 signal of OPORT1 resistor.
D5V1	15	---	Power Supply, etc.	5V power supply terminal of digital circuit.
OP2	16	3 states output	Output port	Outputs BIT2 signal of OPORT1 resistor.
OP3	17			Outputs BIT3 signal of OPORT1 resistor.
OP4	18			Outputs BIT4 signal of OPORT1 resistor.
OP5	19			Outputs BIT5 signal of OPORT1 resistor.
OP6	20			Outputs BIT6 signal of OPORT1 resistor.
OP7	21			Outputs BIT7 signal of OPORT1 resistor.
RXD	22	TTL input	PCM interface	Input terminal for PCM data
TXD	23	Output		Output terminal for PCM data
-FSYNC	24	TTL input		Input terminal of Sync. signal for PCM interface. The frequency of input sync. signal is 8 kHz.
BCLK	25			Input terminal of shift clock pulse for PCM data. Input pulse frequency range is 64 kHz~2.048 MHz. PCM data (TXD terminal signal) is output at the positive edge. PCM data (RXD terminal signal) is sampled at the negative edge. The sampling is performed inside LSI.
MCLK	26	Output	Clock	Clock pulse output terminal. Output pulse frequency is 6.144MHz. System reset (inputting "0" to -RESET terminal) doesn't stop this output.
CKO	27			Clock pulse output terminal which has selective frequencies. The following 4 frequencies can be selected by resistor setting: 12.228, 4.096, 2.048, 1.536 (MHz) System reset (inputting "0" to -RESET terminal) selects the frequency of 1.536MHz and doesn't stop this output.
DG2	28	---	Power supply, etc.	Ground terminal of digital circuit.
OSCI	29	---	Clock	Input terminal of oscillation circuit. Connect the oscillator and resistor between this terminal and pin 30(OSCO), moreover, connect the capacitor between this terminal and digital ground to make the oscillation circuit.
OSCO	30	---		Output terminal of oscillation circuit. Connect the oscillator and resistor between this terminal and pin 29 (OSCI), moreover, connect the capacitor between this terminal and digital ground to make the oscillation circuit.
D5V2	31	---	Power supply, etc.	5V power supply terminal of digital circuit.
-INT	44	Output	Micro-computer interface	Outputs 8 kHz clock pulse which is synchronized with -FSYNC.
TEST	45	CMOS input	Power supply, etc.	Test terminal Connect to the digital ground.
A5V3	46	---		5V power supply terminal of analog circuit.
HI	47	Analog input	Analog	Input terminal of TX handset signal. Either this signal or the signal supplied to pin 49 (HI) is input to AD converter.
VBB	48	---	Power supply, etc.	Reference voltage terminal of AD converter. Connect the capacitor of 10 $\mu$ F between VBB terminal and pin 50 (AG3).



Name	NO.	I/O	Classification	Function
MI	49	Analog input	Analog	Input terminal of TX microphone signal. Either this signal or the signal supplied to pin 47 (HI) is input to AD converter.
AG3	50	---	Power supply, etc.	Ground terminal of analog circuit.
A5V4	51			5V power terminal of analog circuit.
AP2HO	52	Analog output	Analog	Output terminal of microphone amplifier H2. Connect the capacitor of 0.1 $\mu$ F to this terminal to cut the DC.
AP2HI	53	Analog input		Inverting input terminal of microphone amplifier H2. Connect the capacitor of 0.1 $\mu$ F to this terminal to cut the DC.
AP1HO	54	Analog output		Output terminal of microphone amplifier H1. Connect the capacitor of 0.1 $\mu$ F to this terminal to cut the DC.
AP1HN	55	Analog input		Inverting input terminal of microphone amplifier H1. Connect to the handset.
AP1HP	56	Analog input	Analog	Non-inverting input terminal of microphone amplifier H1.
VREFM	57	---	Power supply, etc.	Reference voltage terminal of microphone amplifier. Connect the capacitor of 40 $\mu$ F between this terminal and pin 56 (MICG).
AG4	58			Ground terminal of analog circuit.
APMO	59	Analog output	Analog	Output terminal of microphone amplifier. Connect the capacitor of 0.1 $\mu$ F to this terminal to cut the DC.
APMN	60	Analog input		Non-inverting input terminal of microphone amplifier M.



# BLOCK DIAGRAM





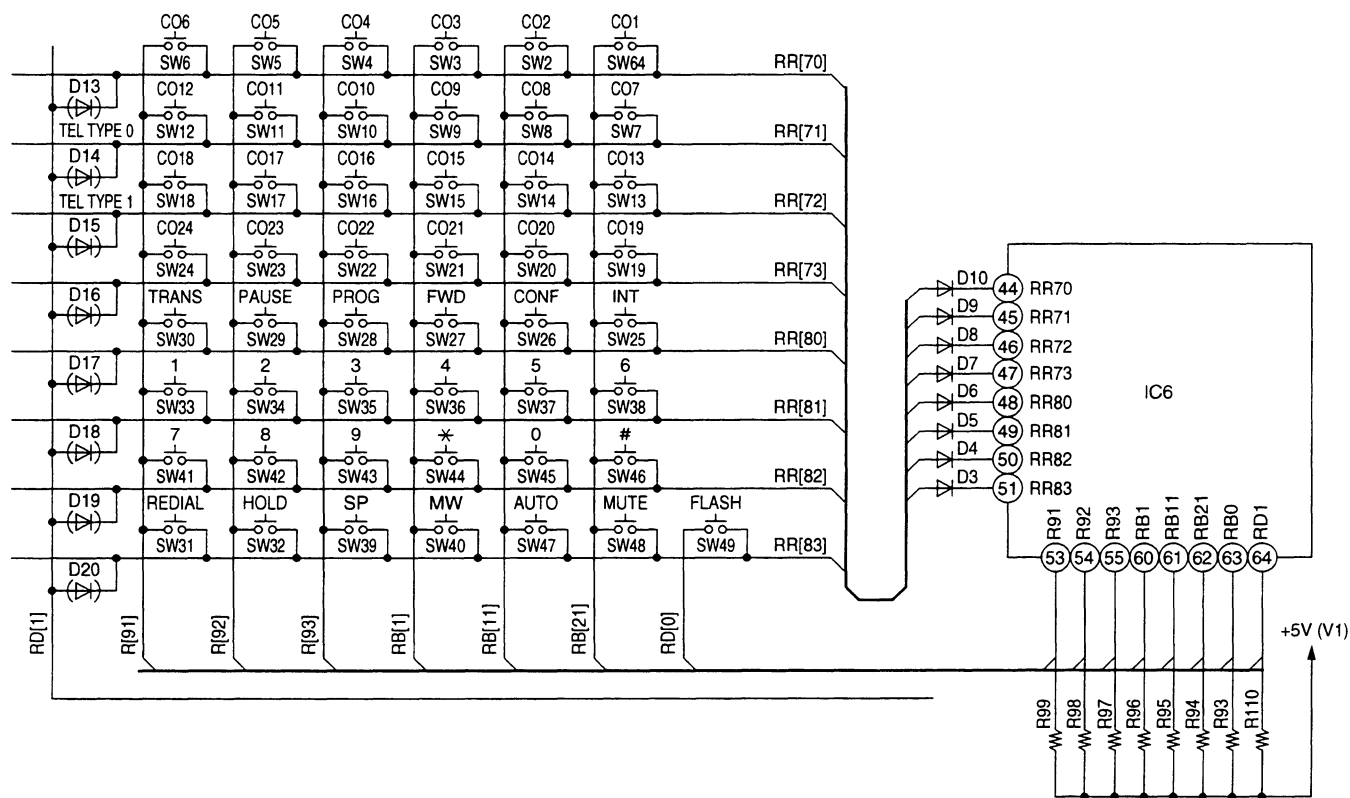
CIRCUIT OPERATIONS

1. KEY INPUT CONTROL CIRCUIT

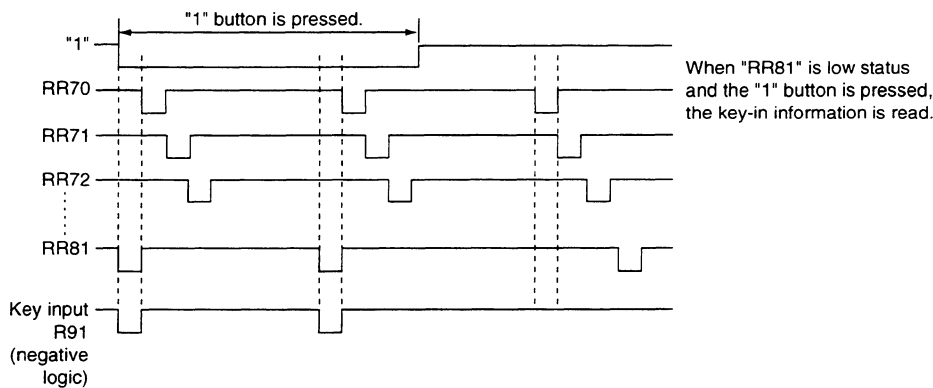
1) Circuit Operation

Sequential input information (negative logic) from the DSHS proprietary telephone is executed by dynamic scanning. The ports RR70 to RR73, RR80 to RR83 of IC8 are brought to low status consecutively. If a key is pressed, the key-in information input is executed by ports R91 to R93, RB1, RB11, RB21, RB0, RD1.

Circuit Diagram



Key Input Control Timing Chart



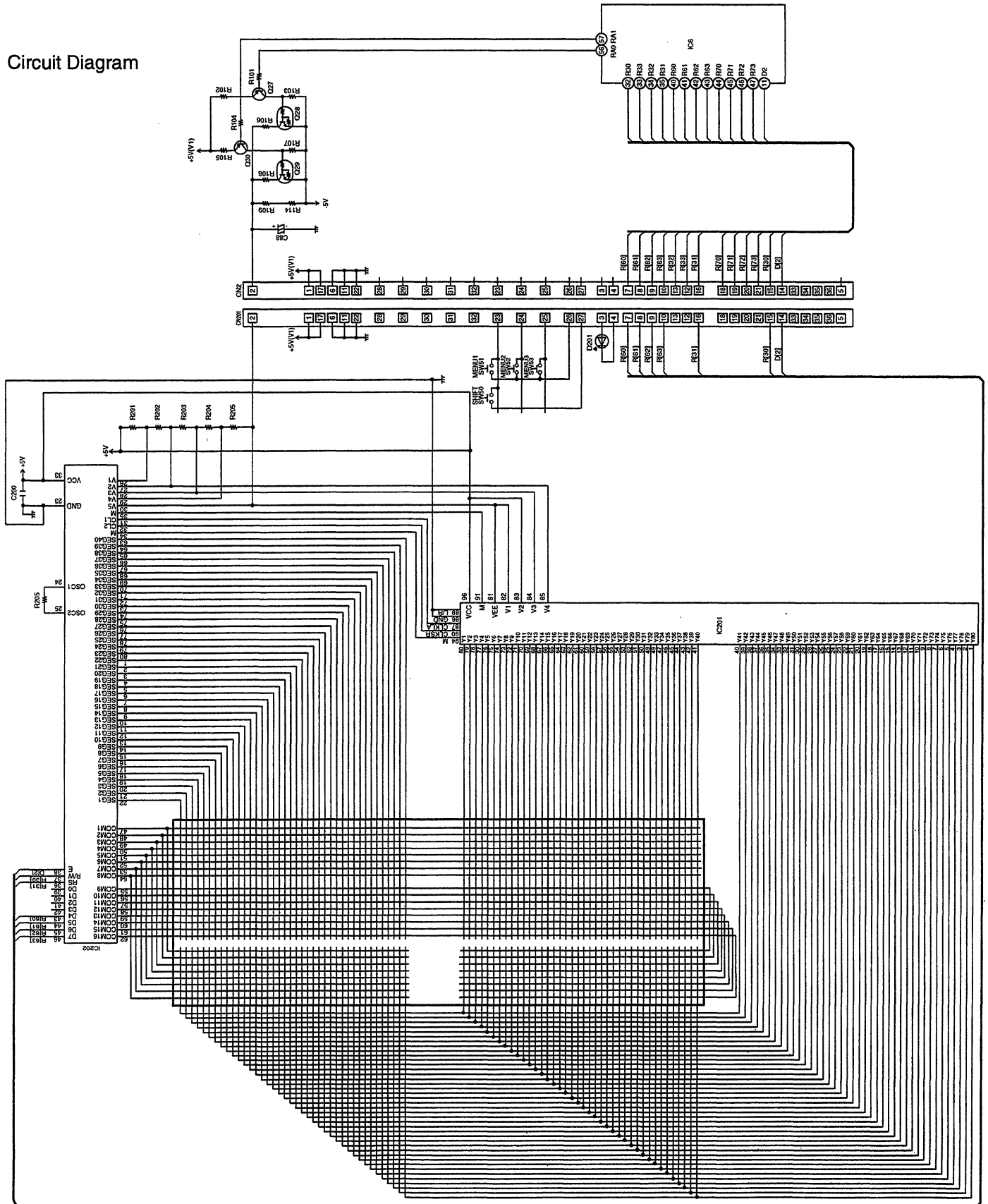


## 2. LCD CONTROL CIRCUIT

### 1) Circuit Operation

The LCD data is output from pins 32 to 35, 40 to 47 and 11 of IC6. LCD contrast adjustment is performed by the circuit composed of Q28, Q29, R109, R108 and R106. The contrast is determined only by the voltage level between V5 and VEE of IC202 and IC201. Higher potential makes the contrast high.

### Circuit Diagram





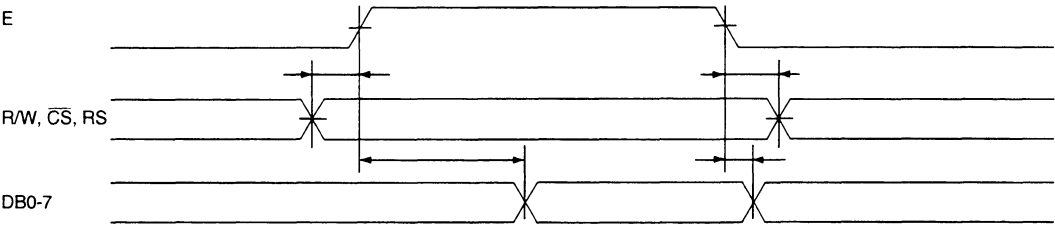
LCD Contrast Control

CONTRAST	IC9 Pin 56	IC9 Pin 57
HIGH	H	L
MIDDLE	L	H
LOW	H	H

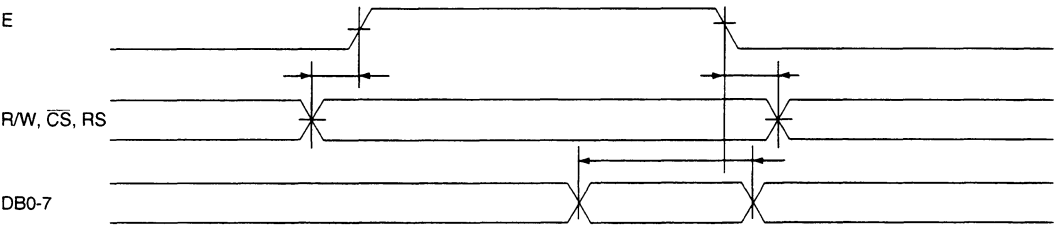
4-bit Data Transfer Timing Sequence

Data Transfer Timing Sequence

READ CYCLE



WRITE CYCLE





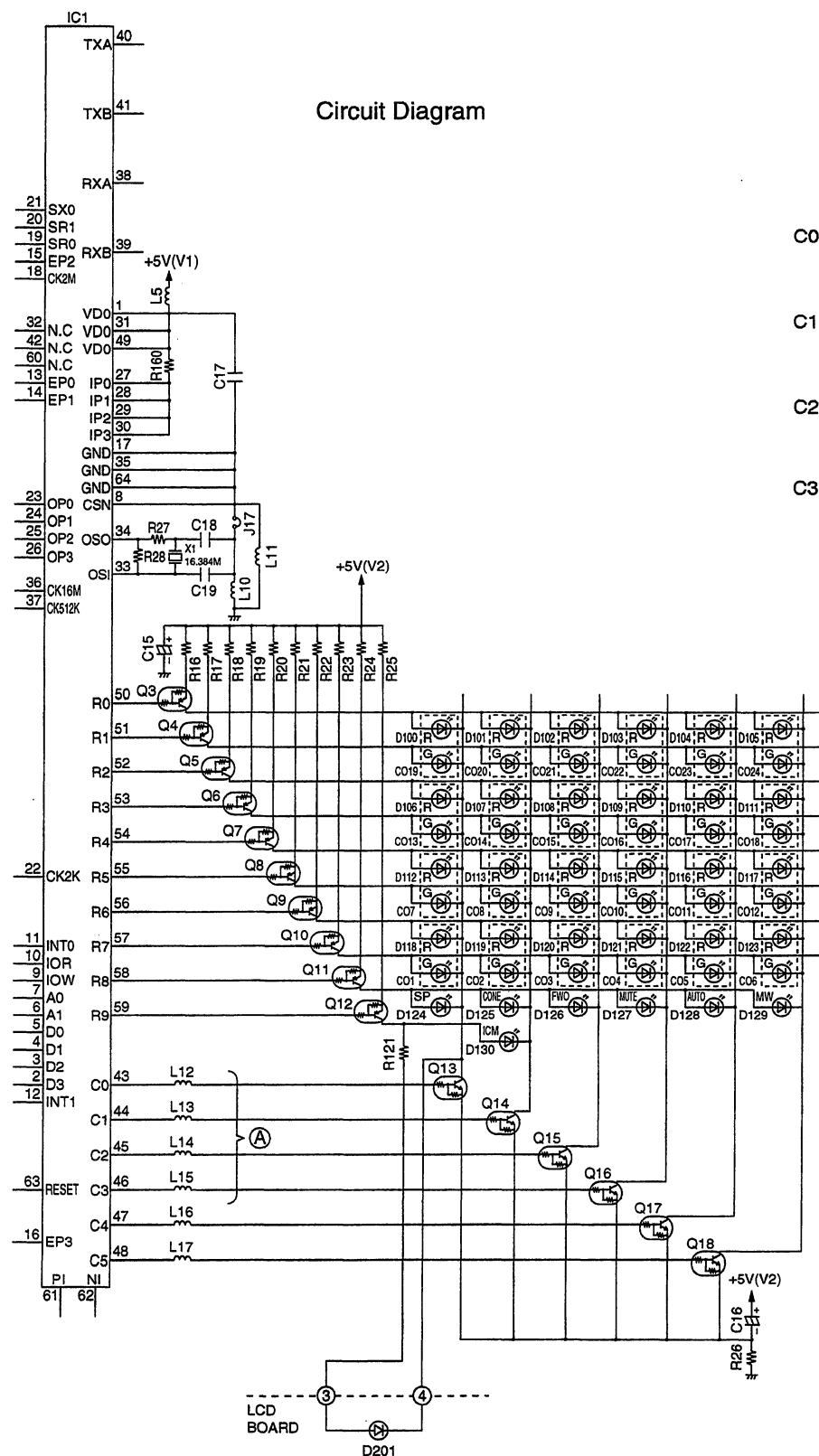
### 3. LED CIRCUIT

### 1) Circuit Operation

The LED executes dynamic lighting for the status indicators, and control is executed by the output ports C0 to C5 (column) and R0 to R9 of IC1.

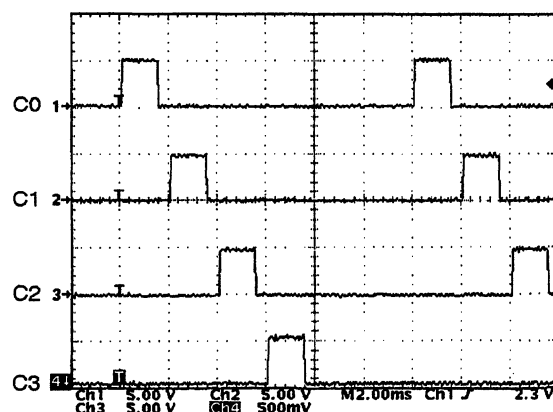
A fixed pulse (T=1.82 msec) is output continuously from the/SCK1 terminal of IC9. This pulse is counted and the output of IC1 is shifted sequentially from C0 to C5.

R0 to R7 of IC1 also output pulses, and the lighting of the LED is controlled by the timing of the output ports C0 to C5.



### Circuit Diagram

Ⓐ Waveform





## 4. DATA COMMUNICATION CIRCUIT

### 1) Function

The data communication circuit serves the following functions:

Information exchanger between the DSHS and DSHS proprietary telephone, key input information as well as data for the LED control, LCD control, etc. This information is continuously exchanged at all times.

### 2) Circuit Operation

When the DSHS proprietary telephone receives an IRQ signal from the DSHS and after sending the key input information to the DSHS and receiving data for the LED control, etc., the DSHS proprietary telephone will return to the DSHS an acknowledge signal.

### 3) Reception

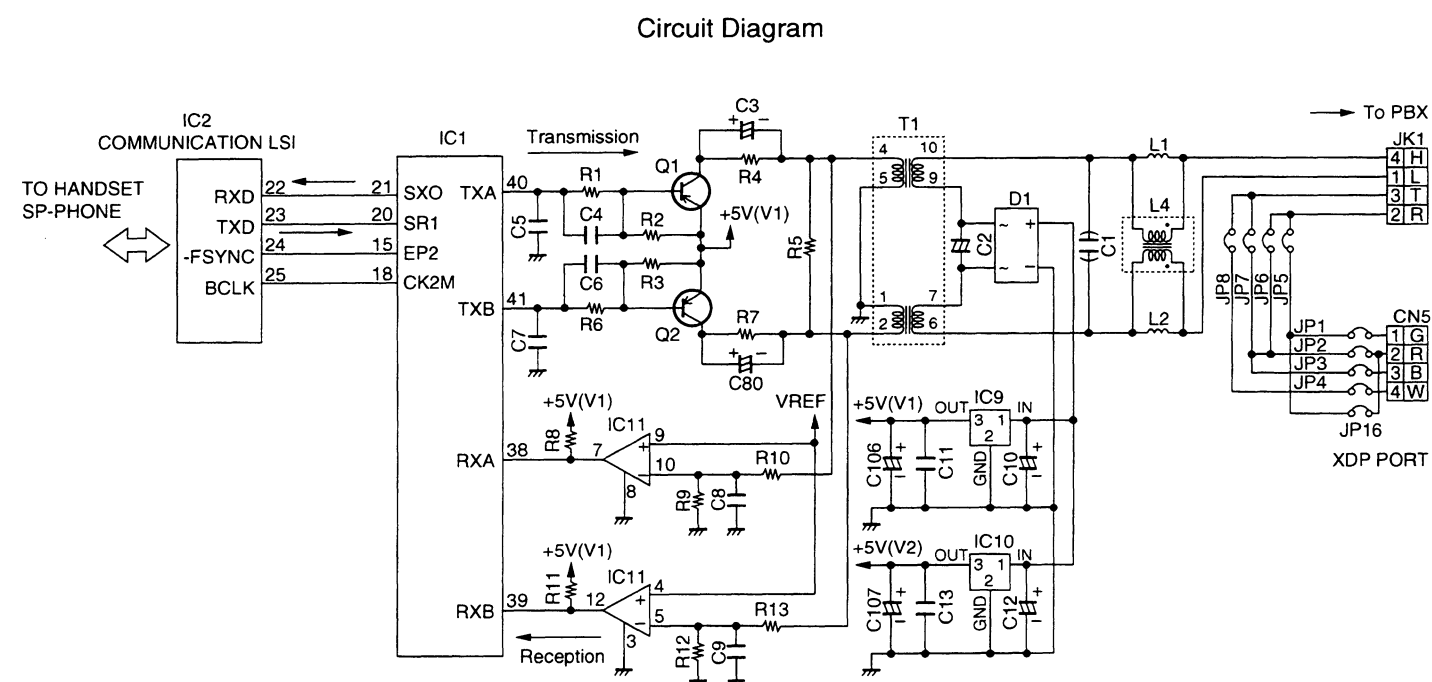
The data from the DSHS is received via the H and L lines along the path shown below.

H, L Line → T1 → IC11 Pin 5, 10 → IC1 Pin 38, 39 → IC1 Pin 21 → IC2 Pin 22

### 4) Transmission

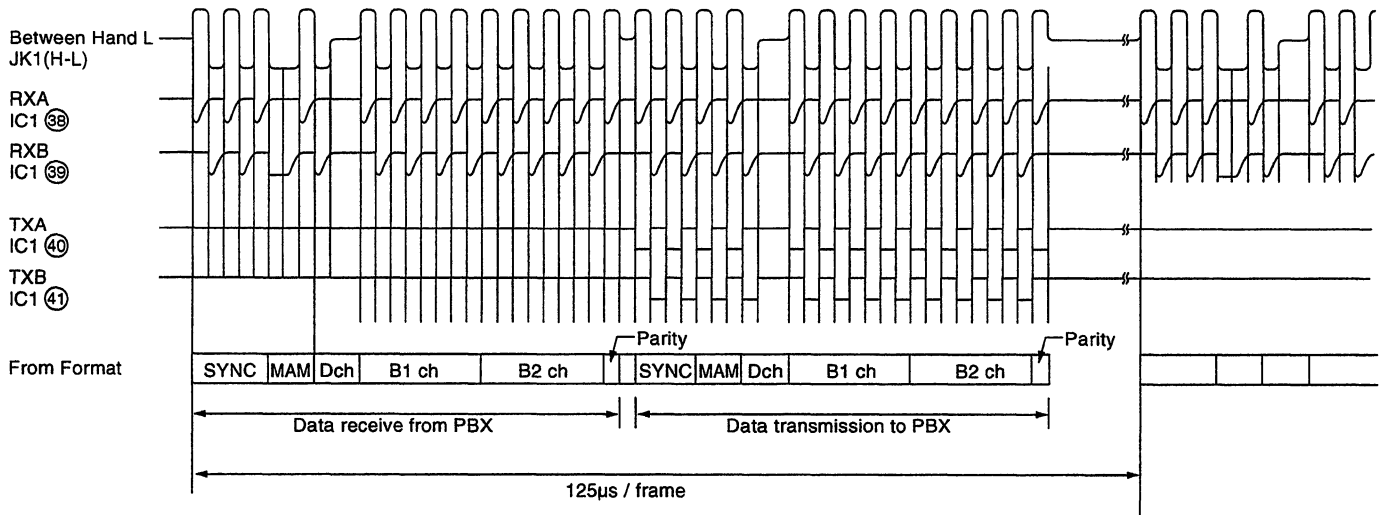
The data to the DSHS proprietary telephone is transmitted along the following path.

IC2 Pin 23 → IC1 Pin 20 → IC1 Pin 40, 41 → Q1, Q2 → T1 → H, L Line





Timing Chart for D-PITS Transmission

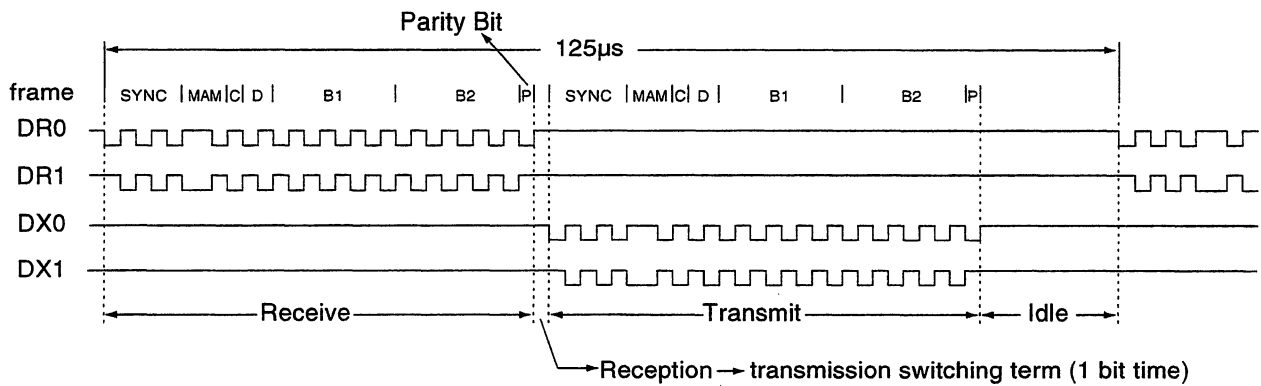


### 5) IC1 (GATE ARRAY) DPITS Interface

DPITS Layer 1 interface. DR [1:0] is receiving input and DX [1:0] is transmitting output.

Layer 1 is the transmission method of Ping-Pong type which is AMI encoded. "SYNC/MAMC/D/B1/B2/P" data is received in the first half at 125us/frame. After 1 bit time has passed since receiving P data, "SYNC/MAM/C/D/B1/B2/P" is transmitted. 1 bit time is 512kHz. 7-bit time idle term comes after receiving P data.

Dpits Frame Timing





## 6) PCM interface (between IC1 and IC2)

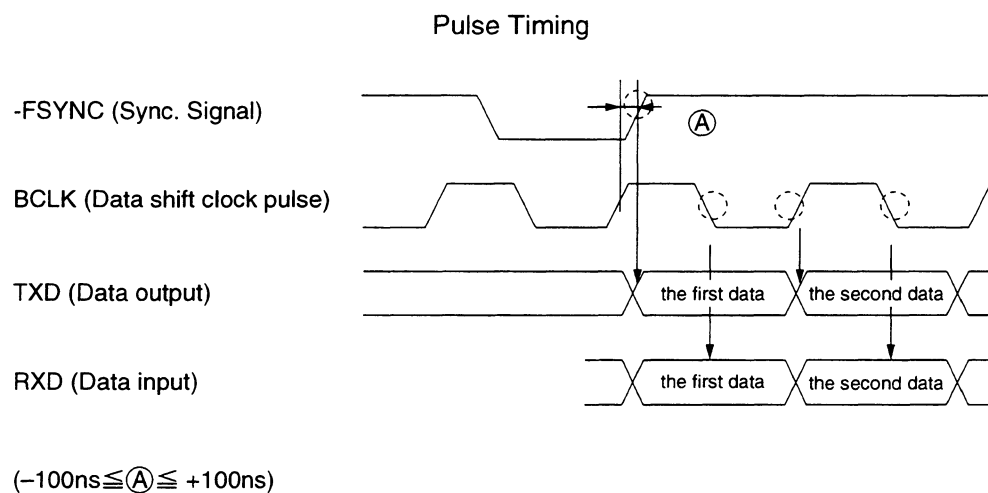
PCM interface consists of following 4 terminals.

PCM interface terminal

-FSYNC	8kHz sync. signal input terminal	BCLK	PCM data shift clock input terminal
TXD	TXD data output terminal	RXD	PCM data input terminal

The first PCM data is output from TXD at the positive edge of -FSYNC. The second data and the followings are output at the positive edge of BCLK. After all data of 8 bit are output, the last data is kept until the positive edge of next -FSYNC. The positive edge of BCLK should be within  $\pm 100\text{ns}$  from the positive edge of -FSYNC.

The PCM data input from RXD is sampled at the negative edge of BCLK inside LSI. The sampling of the first data is performed between the positive edge of -FSYNC and the first negative edge of BCLK. After completing the sampling of all data of 8 bit, this sampling pauses until the next positive edge of -FSYNC.





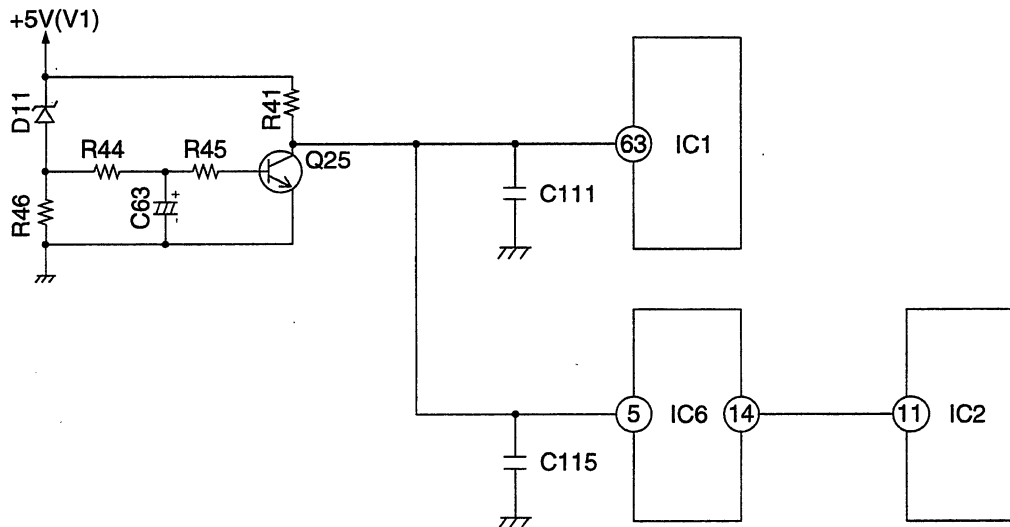
## 5. RESET CIRCUIT

### 1) Circuit Operation

This circuit is used for transmission of a reset pulse to the CPU (IC6) at the following times, connecting the telephone line jack and circuit operation.

The timing chart is shown below.

Circuit Diagram



Power ON

Q25 OFF

The reset signal goes up with the power voltage.

D11 Zener Diode ON

Charging C63 is started.

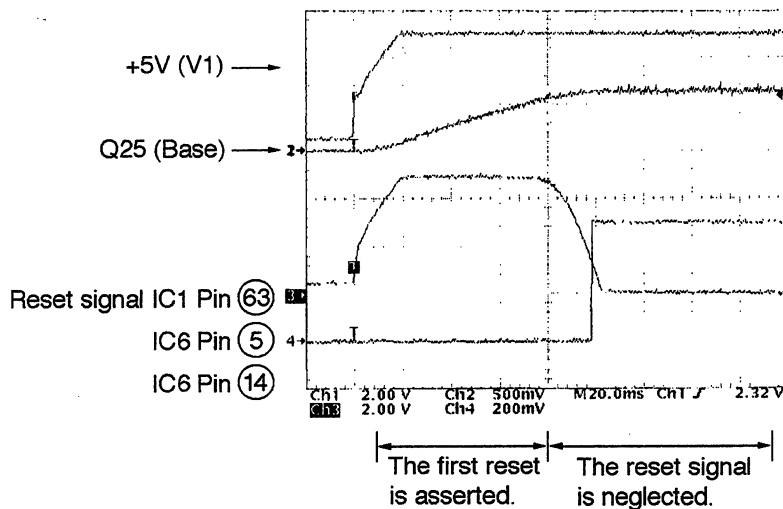
The base voltage of Q25 goes up.

Reset signal is asserted

Q25 ON

The reset signal is neglected.

Timing Chart



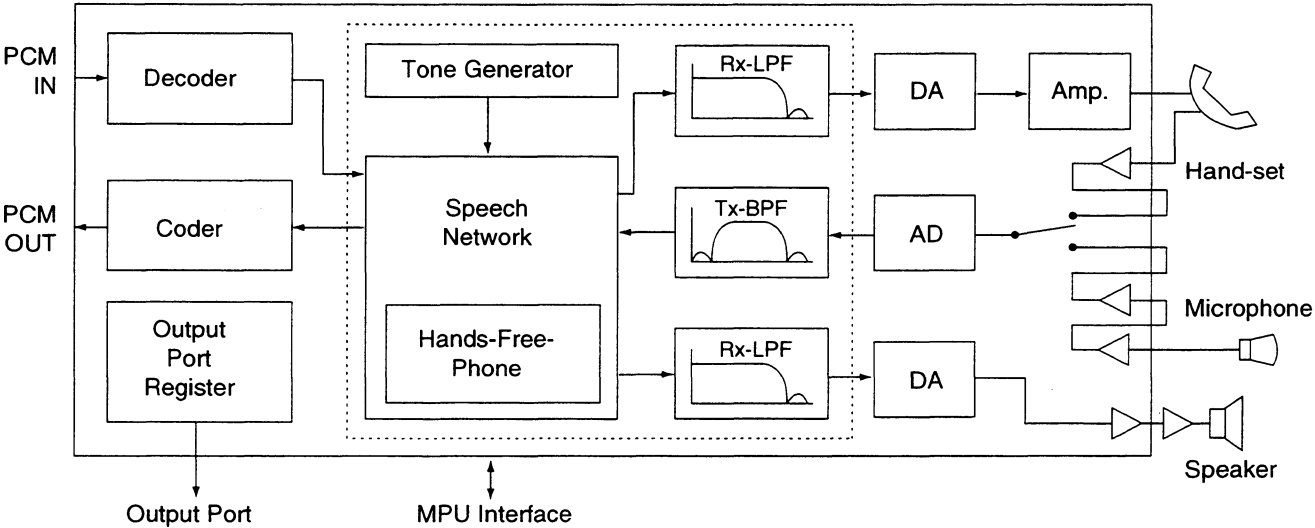


6. TONE GENERATION CIRCUIT

1) Function

Calling tones, Busy tone, DTMF signal and Key in tone are generated in IC2.

IC2 Block Diagram



DTMF Frequency Table

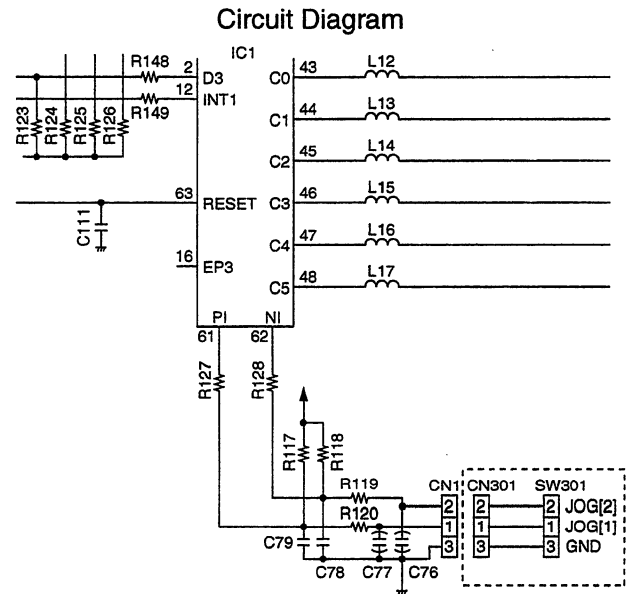
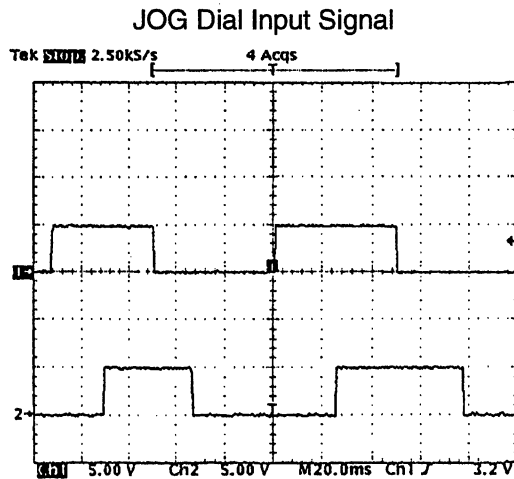
		High Group (IC9 Pin 77)		
		1209 Hz	1336 Hz	1477 Hz
Low Group (IC9 Pin 78)	697 Hz	1	2	3
	770 Hz	4	5	6
	852 Hz	7	8	9
	941 Hz	*	0	#



## 7. JOG DIAL CIRCUIT

### 1) Circuit Operation

This unit is equipped with the JOG switch, which makes the settings of the volume, function selection speed dial, etc. easy and convenient. This JOG switch consists of 2-phase rotary encoder, and the gate array of IC1 counts the number of the rotation to control. The sampling cycle is 1ms and provided with the chattering protective circuit whose available pulse width is 1ms or more.

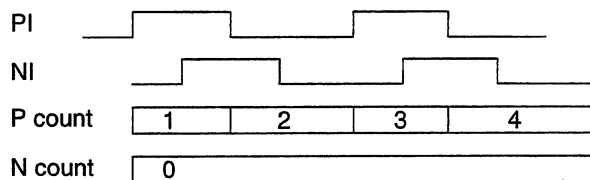


These are the rotary encoder inputs, and sampled 1 kHz (1 msec)/cycle. The built-in chattering protective circuit neglects the input pulse of 1 msec or less. The high pulse of 2 msec or more is available. The availability of the pulse with the width of 1~2 msec is not ensured.

The changed number of these 2-phase inputs is counted cumulatively. The maximum counting value is 255.

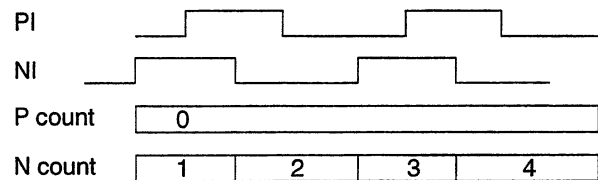
#### [Forward phase count]

Counts PI rising at NI=0, and PI falling at NI=1.



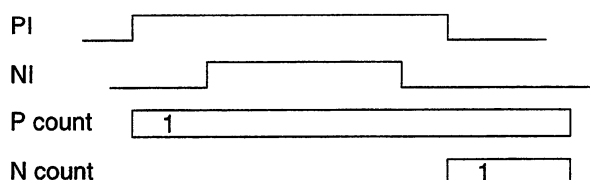
#### [Reverse phase count]

Counts PI rising at NI=1, and PI falling at NI=0.



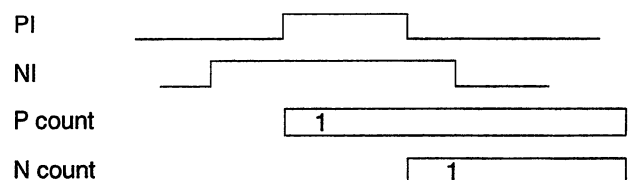
#### [Reverse rotation count-1]

Each P/N is added 1 at the reverse rotation.



#### [Reverse rotation count-2]

Each P/N is added 1 at the reverse rotation.

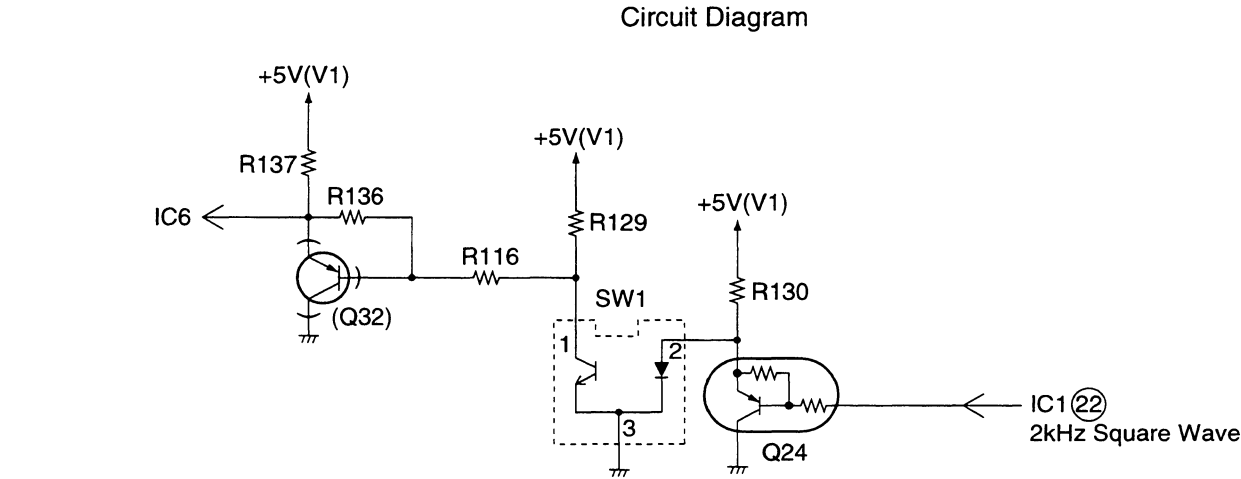




8. HOOK SWITCH CIRCUIT

1) Circuit Operation

The hook switch of this unit employs the photo switch consisting of LED and photo transistor. The 2kHz pulse from the gate array of IC2 causes the LED to emit the light. The light is interrupted at ON-HOOK and passes through at OFF-HOOK by the hooking bar, so that the hooking is performed controlling the light of the photo transistor. The detection signal is determined by the microcomputer of IC6.



9. HANDSET CIRCUIT

1) Transmission signal path

The analog input signal from the handset microphone is input to the communication LSI through the IC2 built-in analog amplifier. In this LSI the network control based on A/D conversion and the handset software and the gain control based on the down load data from the PBX are performed. The voice data is sent to IC1 by the serial transmission. The voice data is transmitted between PBX and DPITS with the protocol originated by KME.

2) Reception signal path

The voice serial data transmitted from PBX is sent to IC1 or IC2 by the serial data. The network control, gain control, A/D conversion is performed in IC2, then the data is output from the handset speaker. Q31 of the handset speaker performs the mute operation by controlling IC6.

3) Circuit diagram for transmission/reception signal path

Refer to page 39.



## **10. SP-PHONE CIRCUIT**

### **1) Transmission signal path**

The analog input signal from SP-phone microphone is input to the communication LSI through the IC2 built-in analog amplifier. In this LSI the network control based on A/D conversion and the handset software and the gain control based on the down load data from the PBX are performed. The voice data is sent to IC1 by the serial transmission. The voice data is transmitted between PBX and DPITS with the protocol originated by KME. IC3 is the SP-phone amplifier, which turns ON/OFF using the port of IC2. The analog switch of IC12 interrupts the input signal.

### **2) Reception signal path**

The voice serial data transmitted from PBX is sent to IC2 by the serial transmission. Then the signal is output from the handset speakerphone after performing the network control, gain control, and A/D conversion in IC2. The SP-phone microphone has the mute function, which interrupts the input signal with the analog switch and controls the port of IC2 with Q26.

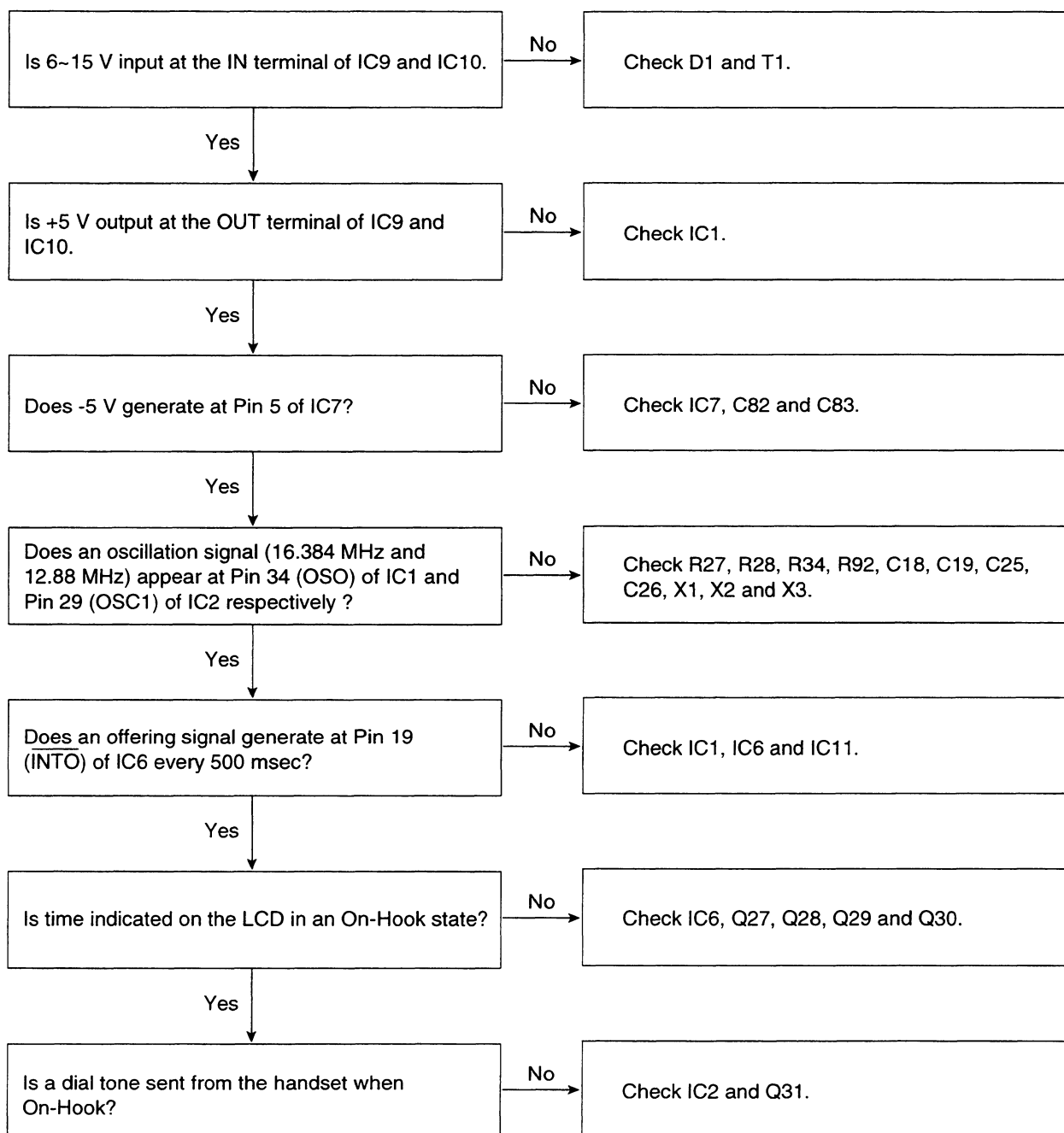
### **3) Circuit diagram for transmission/reception signal path**

Refer to page 39.



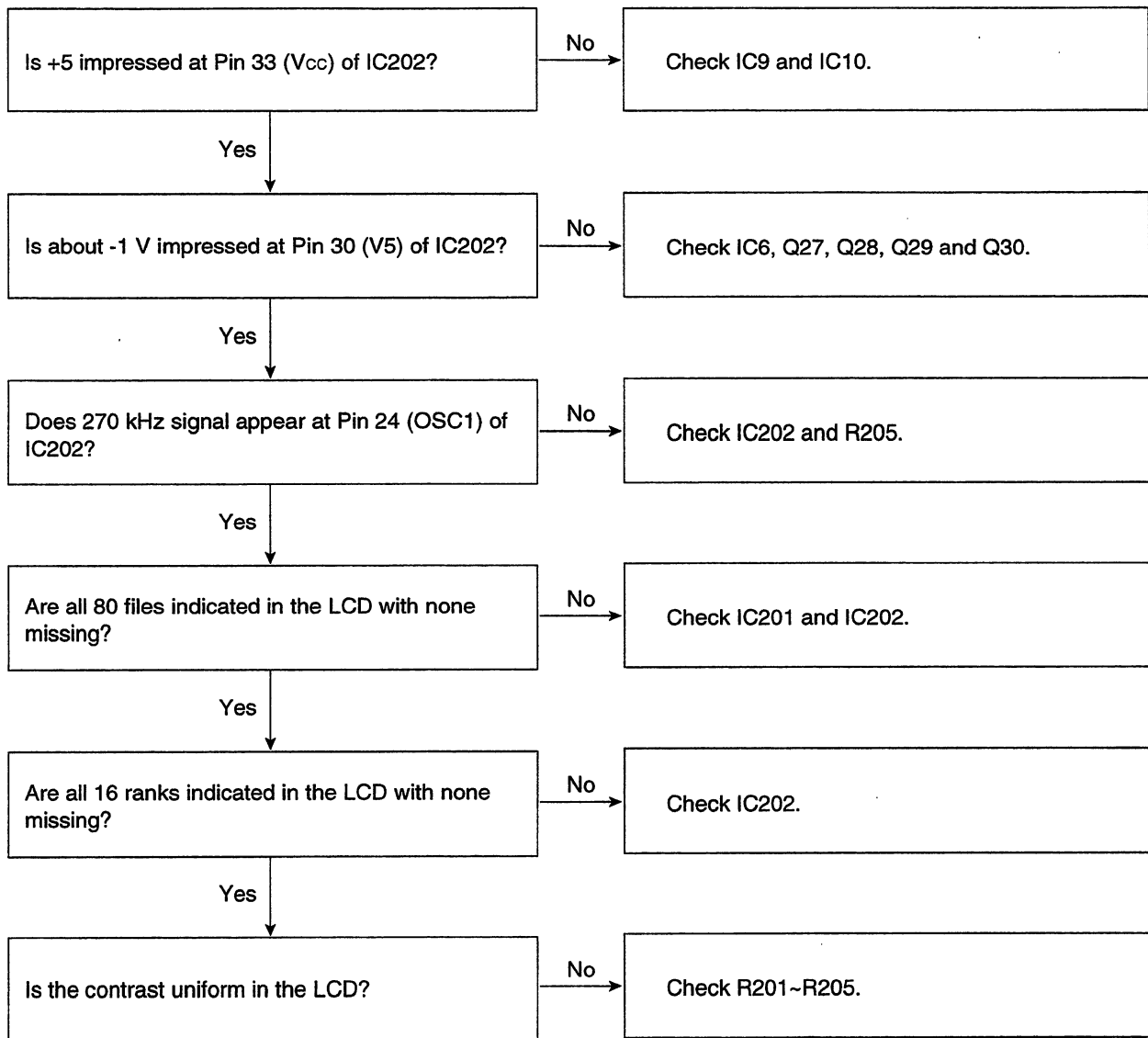
# TROUBLESHOOTING GUIDE

## 1. NO OPERATION.



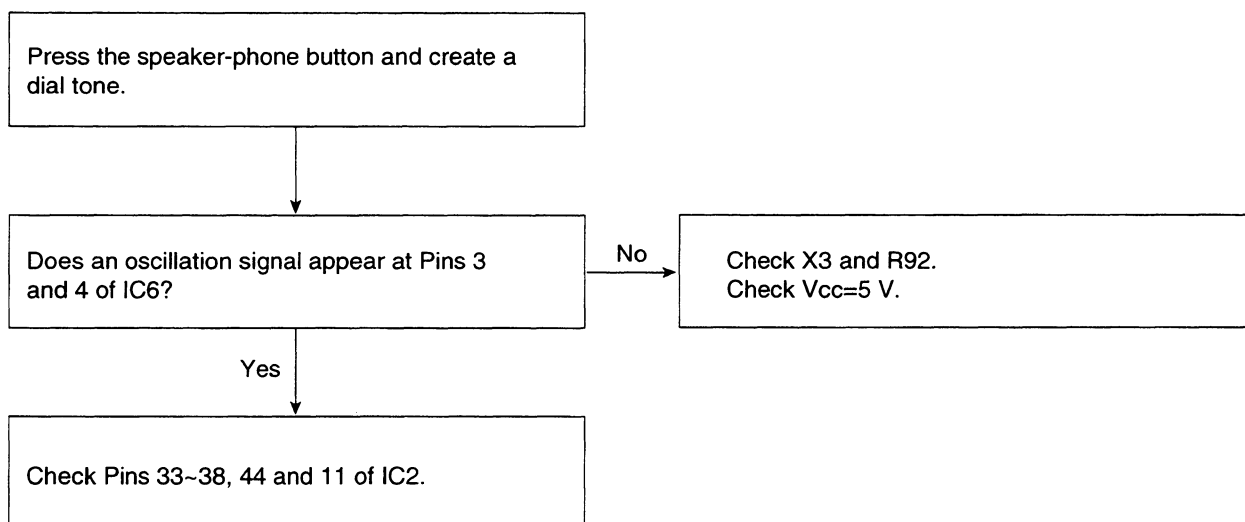


## 2. THE LCD DOES NOT OPERATE.

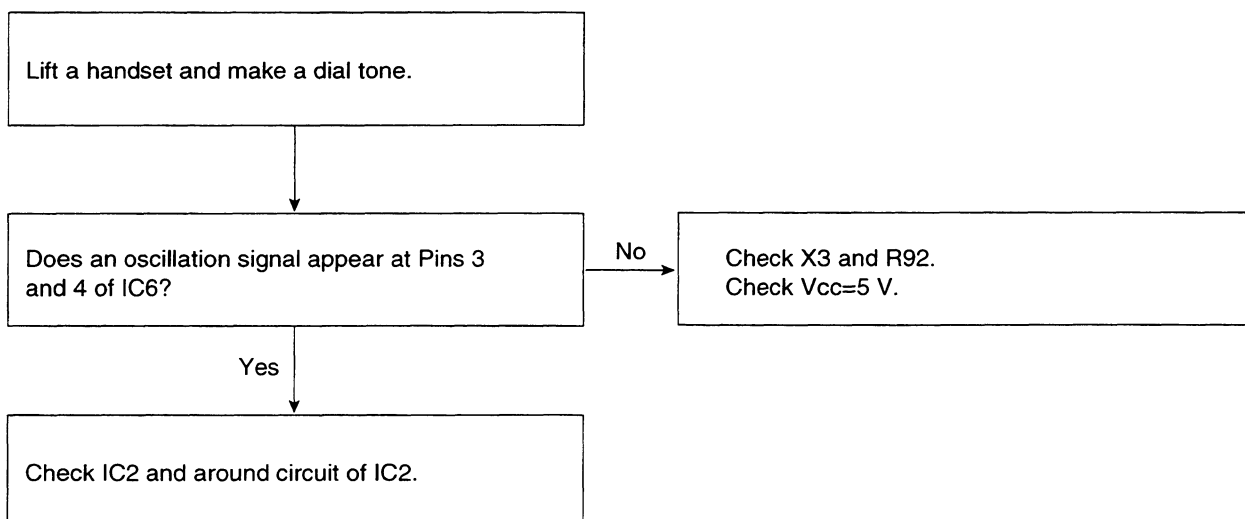




**3. THE ELECTRONIC VOLUME OF THE SPEAKER-PHONE DOES NOT WORK.**

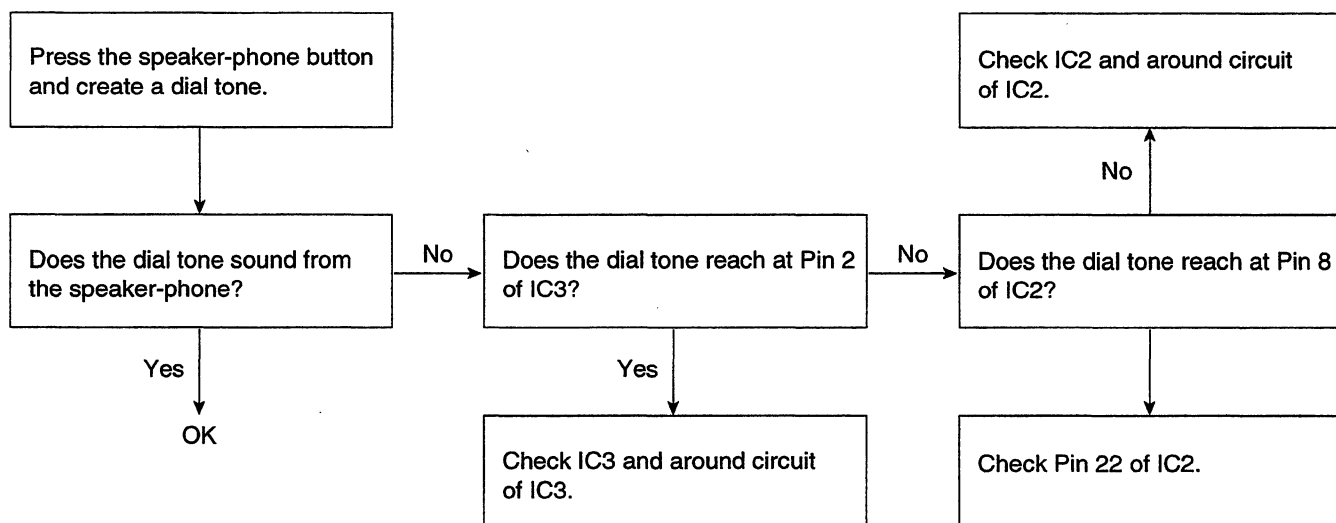


**4. THE ELECTRONIC VOLUME OF THE HANDSET DOES NOT WORK.**

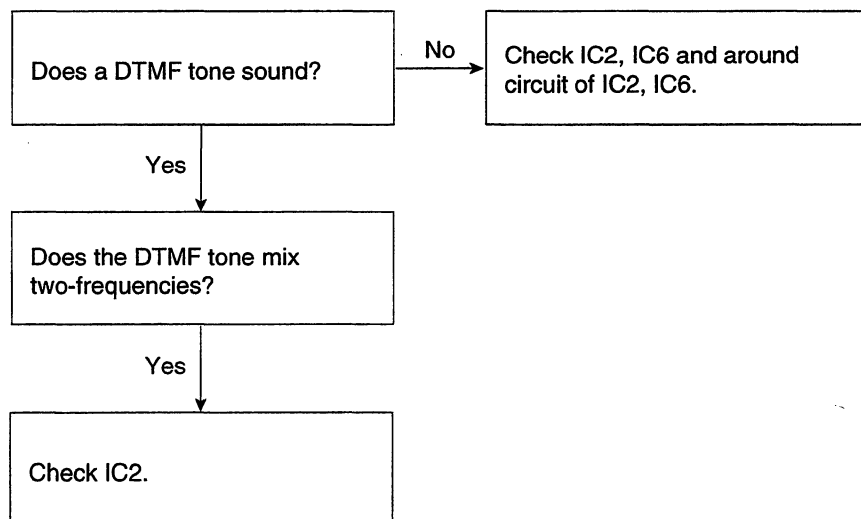




## 5. SPEAKER-PHONE TROUBLE.

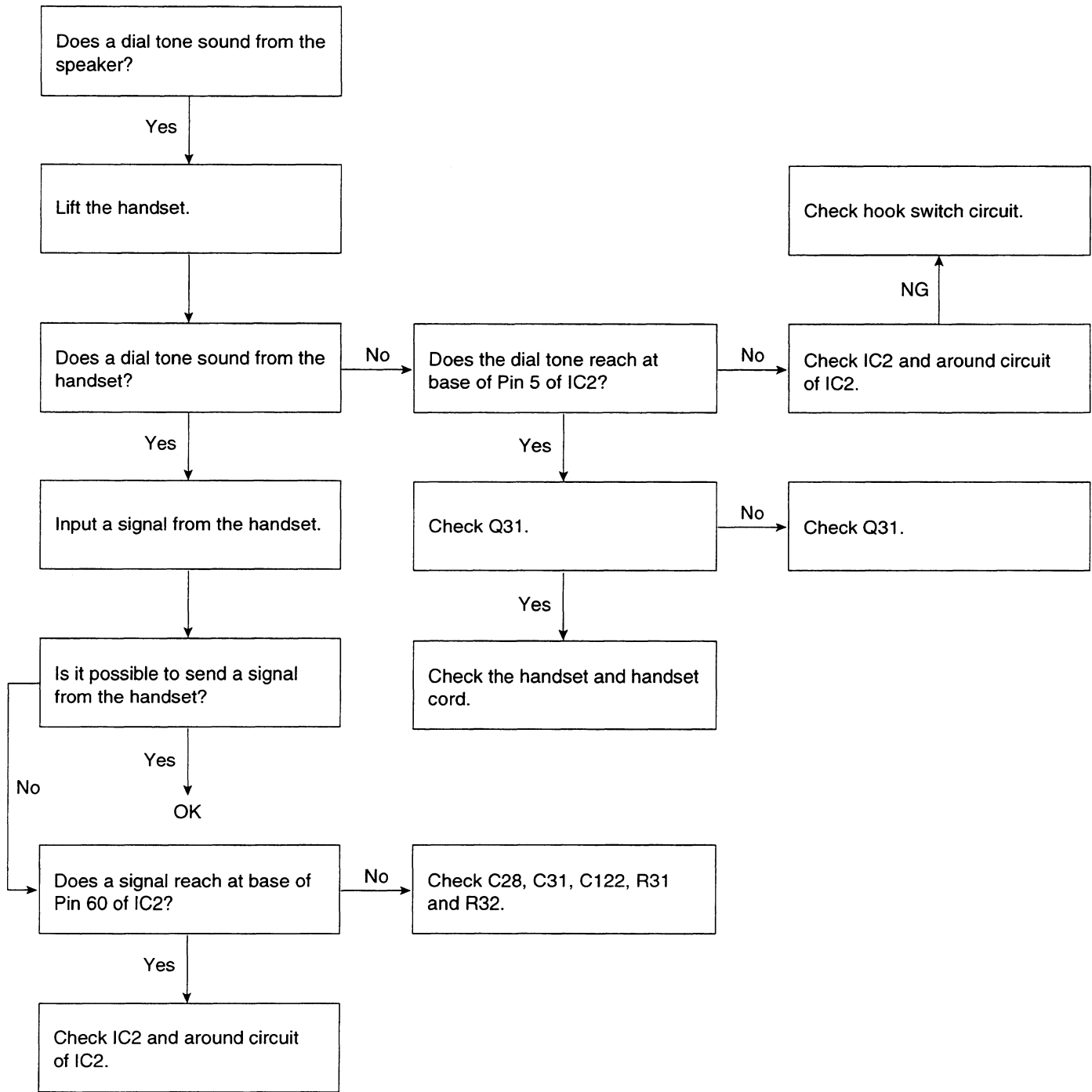


## 6. TONE DIAL TROUBLE.



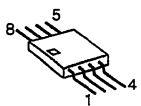
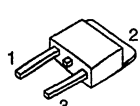
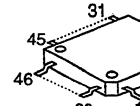
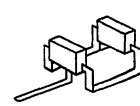
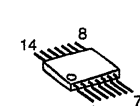
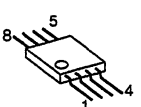
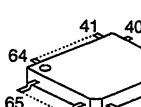
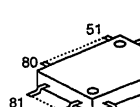
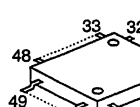
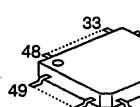
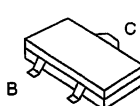
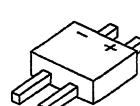

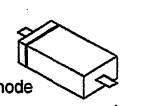
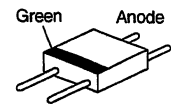
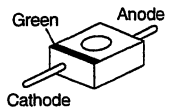
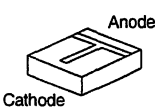


7. HANDSET TROUBLE.





# TERMINAL GUIDE OF IC'S, TRANSISTORS AND DIODES

 <p>PQVIMC34119D</p>	 <p>PSVIBA05FP</p>	 <p>PSVITC5324F2</p>	 <p>PSVII24019T1</p>	 <p>PQVINJM319V</p>
 <p>PQVINJM2904F PQVINJU7660M</p>	 <p>PSVI44780B24</p>	 <p>PQVILC7931D</p>	 <p>PSVIBU65050D</p>	 <p>PSVI40612A04</p>
 <p>2SA1576Q, PQVTFB1J3P PQVTDTA143XU, UN5213 PQVTDTD133HK, 2SC4081Q</p>		 <p>PQVDS1ZB60F1</p>	 <p>RLS71</p>	 <p>PSVDUDZ39B</p>
 <p>PQVDPY1204</p>	 <p>PQVDBR1102W PQVDPY1102</p>	 <p>PSVD111R820R</p>		



## HOW TO REPLACE THE FLAT PACKAGE IC

If you do not have the special tools (for example: SPOT HEATER) to remove the SPOT HEATER'S Flat IC, if you have solder (large amount) a soldering iron and a cutter knife, you can easily remove IC's even though large than 100 pin.

### 1. PREPARATION

- SOLDER - - - - - Sparkle Solder 115A-1, 115B-1  
OR  
Almit Solder KR-19, KR-19RMA
- Soldering iron - - - - - Recommended power consumption is between 30 W to 40 W.  
Temperature of Copper Rod 662  $\pm$  50 °F (350  $\pm$  10°C )
- Flux - - - - - HI115      Specific gravity 0.863

(An expert may handle a 60~80 W iron, but a beginner might damage the foil by overheating.)

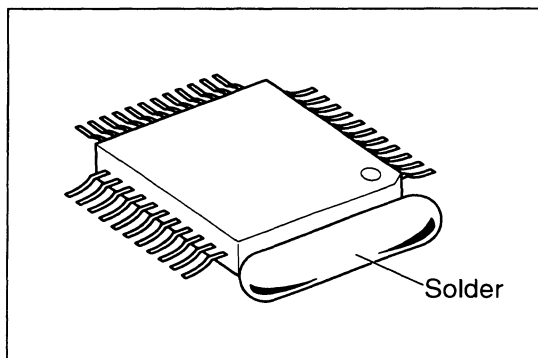
(Original flux should be replaced daily.)

### 2. FLAT PACKAGE IC REMOVE PROCEDURE

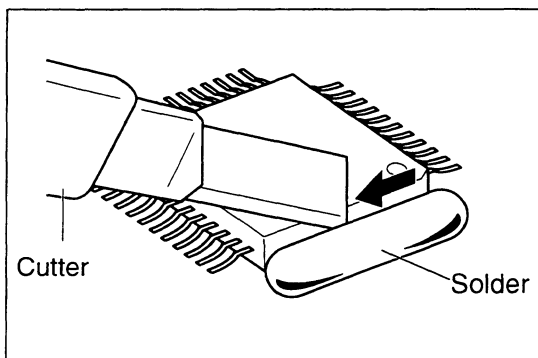
- 1) When all of the IC lead can not been seen at the standard degree, fill with large quantities of solder.

**Note:**

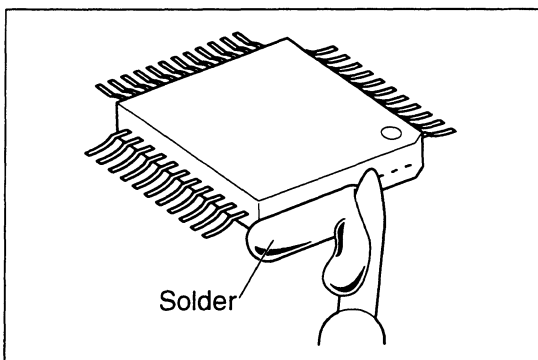
If you do not fill with solder and directly cut the IC lead with the cutter, stress may build up directly in the P.C.board's pattern. If you do not fill with large quantities of solder as in step 1 the P.C.board pattern may be removed.



- 2) Using a cutter, cut the lead at the source.  
(Cut the contents with the cutter lightly 5 or 6 times.)



- 3) Remove when the solder melts.  
(Remove the lead at the same time.)

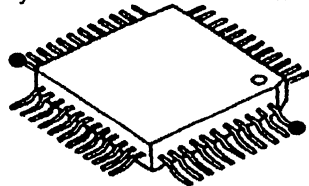




After removing the Flat IC and when attaching the new IC, remove any of the excess solder on the land using the soldering wire, etc. If the excess solder is not removed from the land, the IC will slip and not be attached properly.

### 3. FLAT PACKAGE IC INSTALLATION PROCEDURE

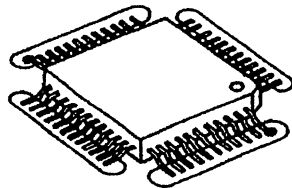
- 1) Temporarily fix the FLAT PACKAGE IC by soldering on the two marked pins.



● - - - - - Temporary soldering point.

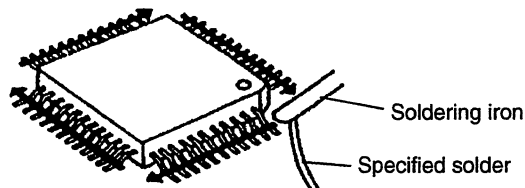
\*Check the accuracy of the IC setting with the corresponding soldering foil.

- 2) Apply flux to all pins of the FLAT PACKAGE IC.



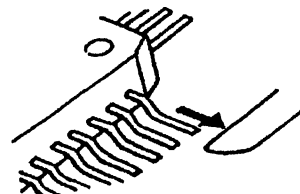
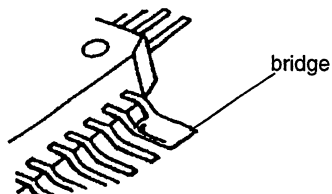
○ - - - - - Flux

- 3) Solder using the specified solder, in the direction of the arrow, by sliding the soldering iron.



### 4. BRIDGE MODIFICATION PROCEDURE

- 1) Lightly re-solder the bridged portion.
- 2) Remove the remaining solder along the pins using a soldering iron as shown in the figure below.





## MEMO



# PRINTED CIRCUIT BOARD

(BOTTOM V

1

2

3

4

5

6

A

B

C

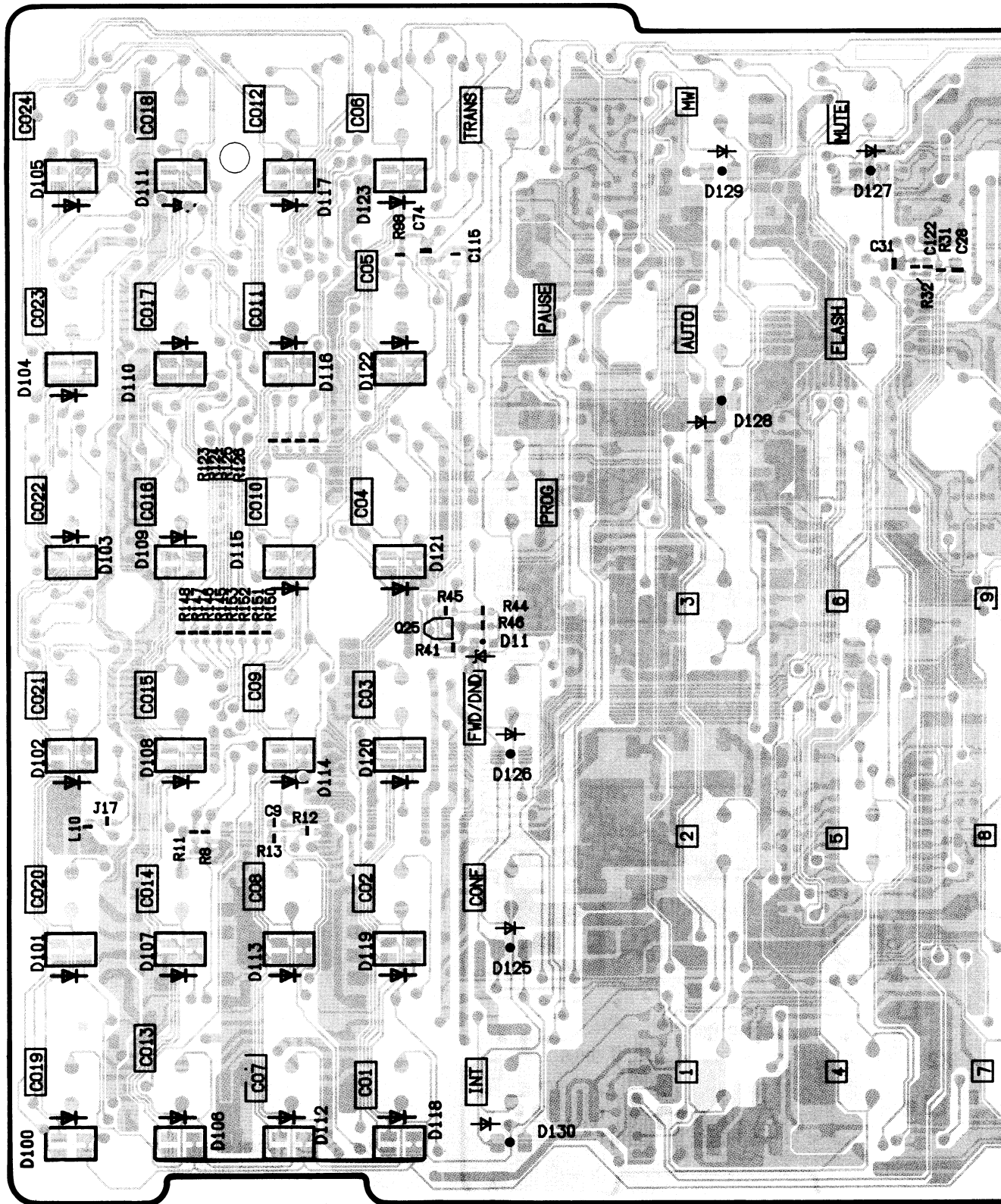
D

E

F

G

H

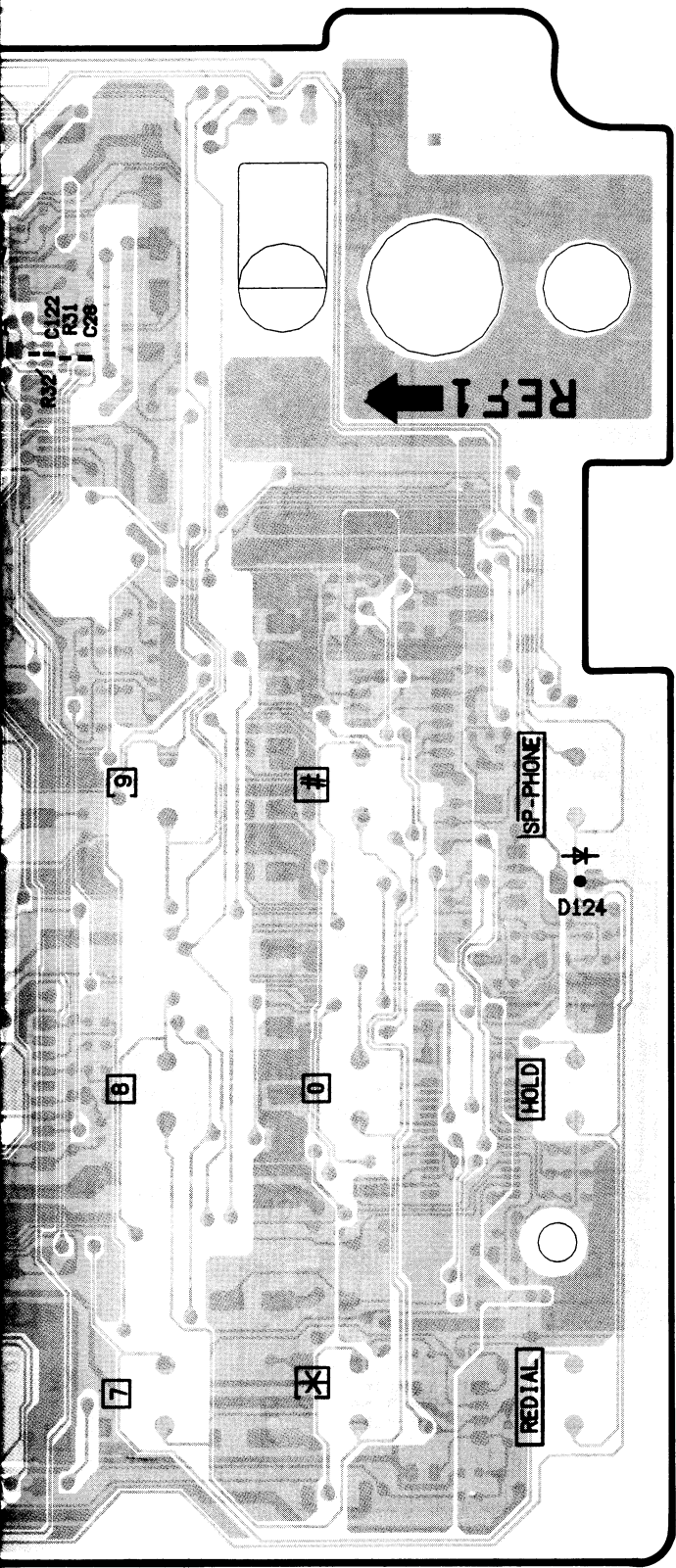




BOARD (MAIN BOARD)

	7	8	9	10	11	12
--	---	---	---	----	----	----

(BOTTOM VIEW)

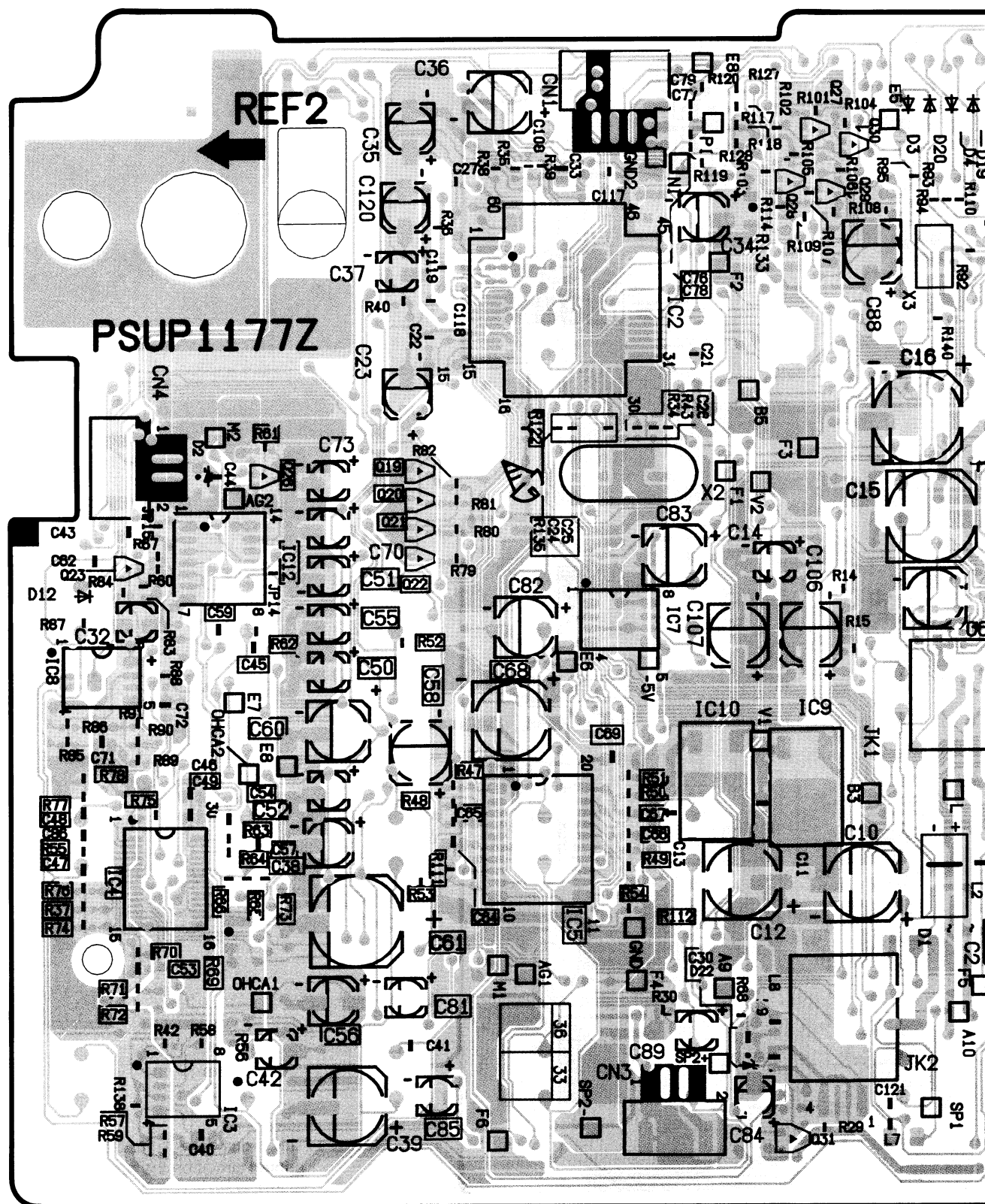


- Notes:**
1. The circuit shown in  on the conductor indicates printed circuit on the back side of the printed circuit board.
  2. The circuit shown in  on the conductor indicates printed circuit on the front side of the printed circuit board.
  3. This printed circuit board may be modified at any time with the development of new technology.



# PRINTED CIRCUIT BOARD

(COMPONENT VIEW)

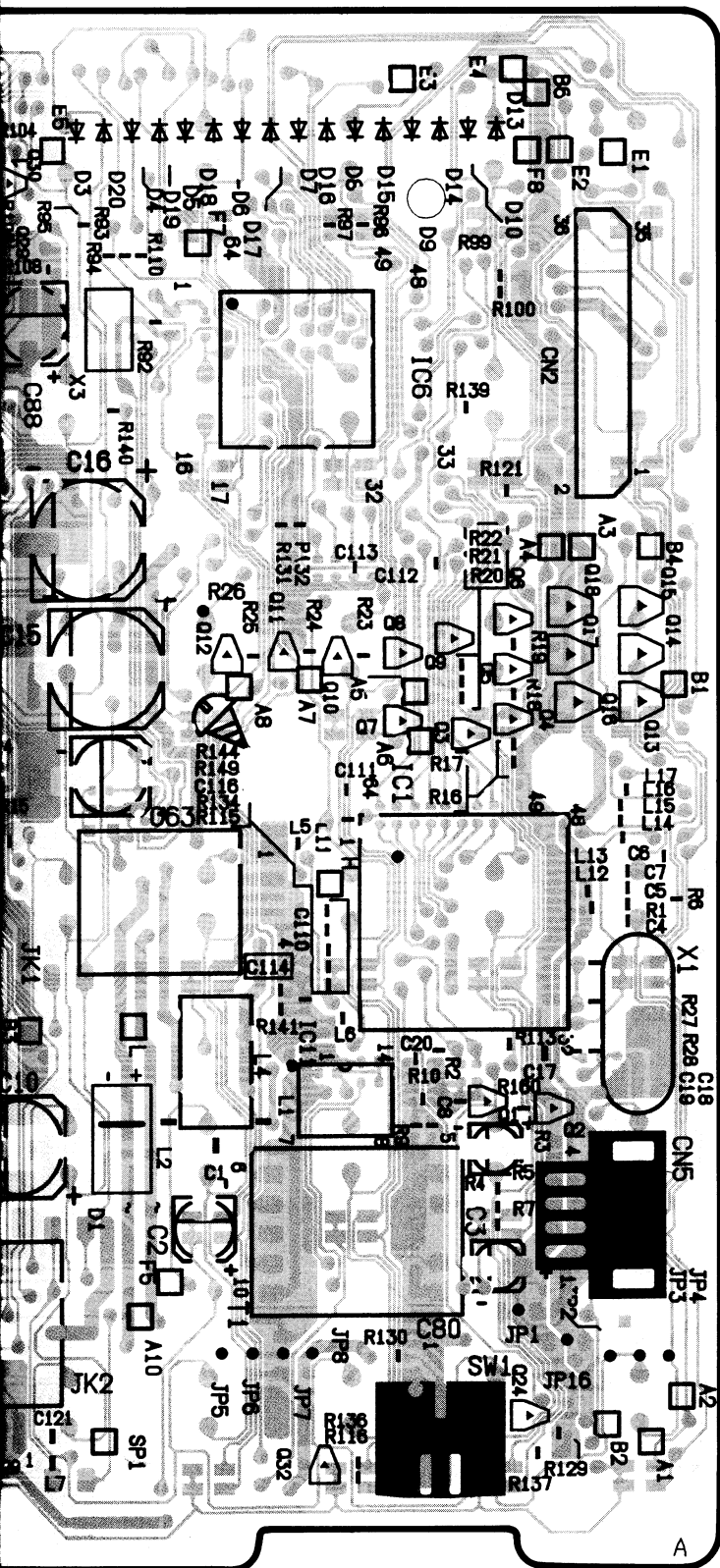






## CIRCUIT BOARD (MAIN BOARD)

6	7	8	9	10	11	12
---	---	---	---	----	----	----

COMPONENT VIEW)

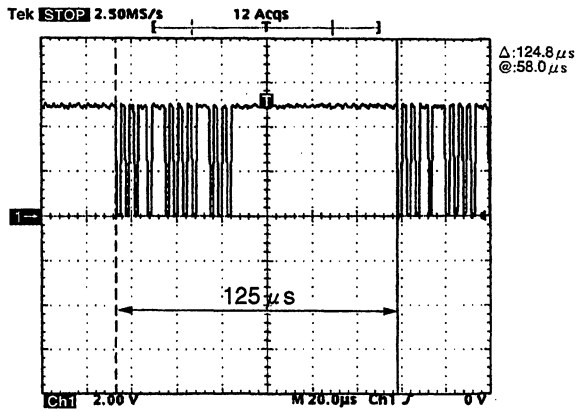


- Notes:**
1. The circuit shown in  on the conductor indicates printed circuit on the back side of the printed circuit board.
  2. The circuit shown in  on the conductor indicates printed circuit on the front side of the printed circuit board.
  3. This printed circuit board may be modified at any time with the development of new technology.

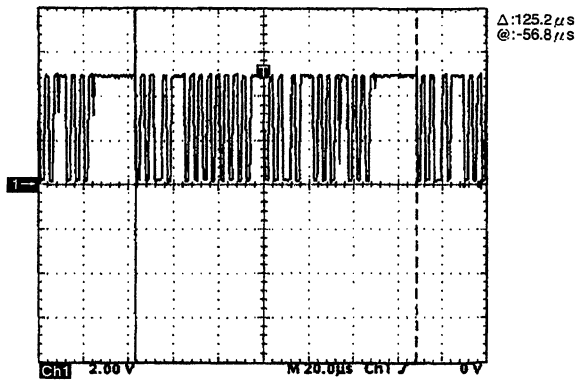


## WAVEFORM

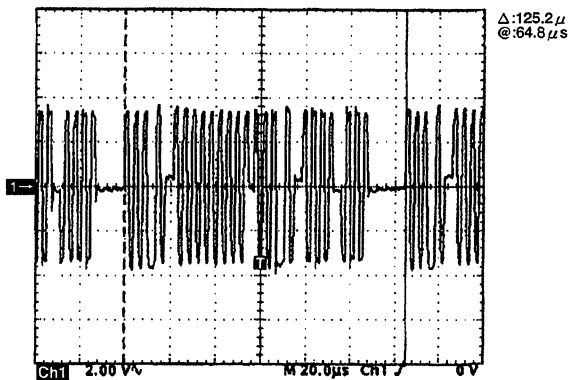
① TX DATA TRANSFER



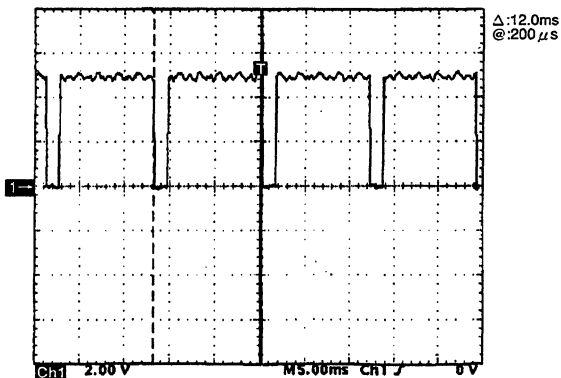
② RX DATA TRANSFER



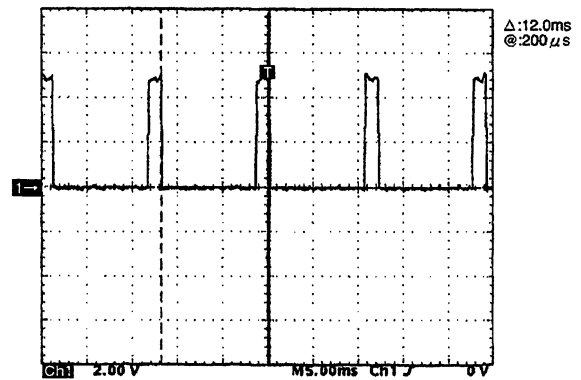
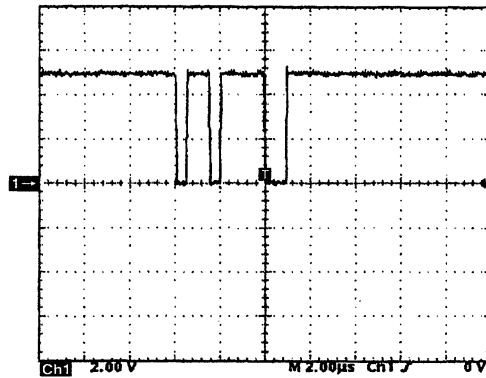
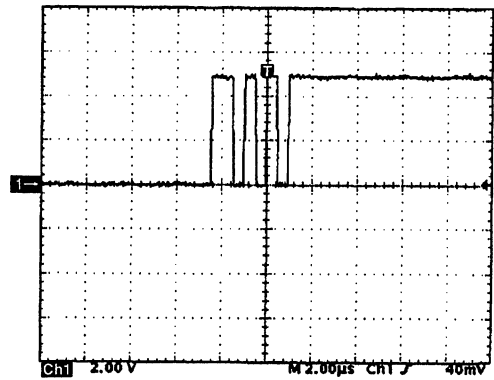
③ H-L DATA



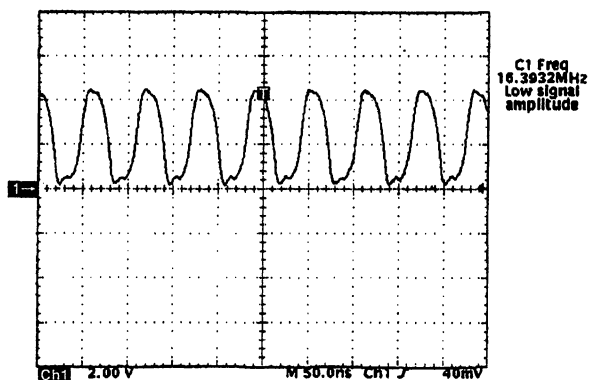
④ LED COTROL DATA



⑤ LED CONTROL DATA

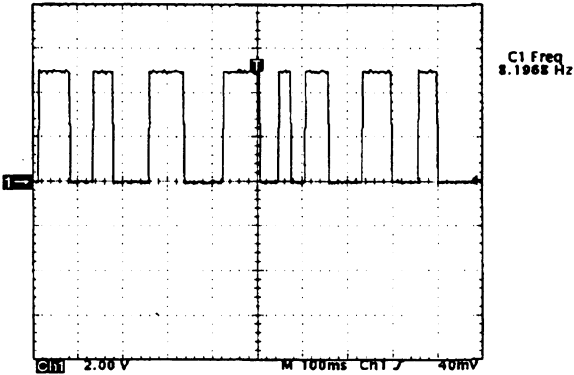
⑥ RX VOICE SERIAL DATA  
(VOICE DATA ON)⑦ TX VOICE SERIAL DATA  
(VOICE DATA ON)

⑧ 16.38MHz CRYSTAL OUTPUT

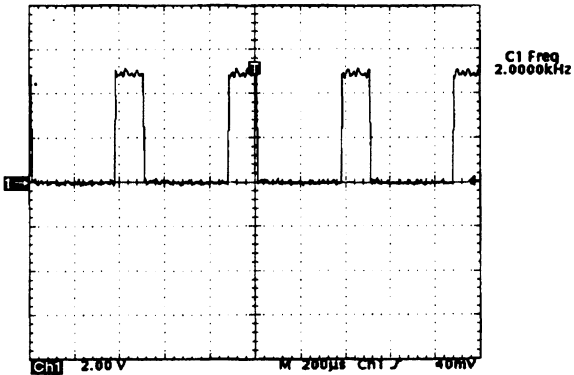




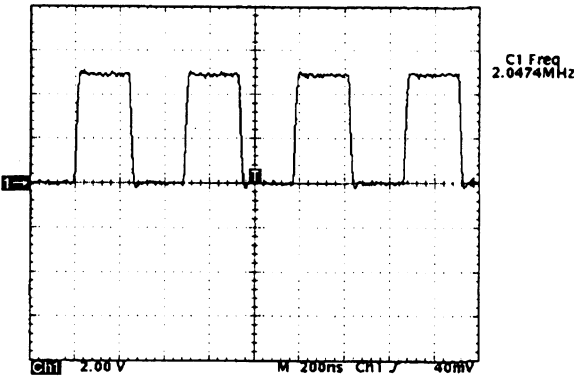
⑨ JOG DIAL  
(JOG OPERATION)



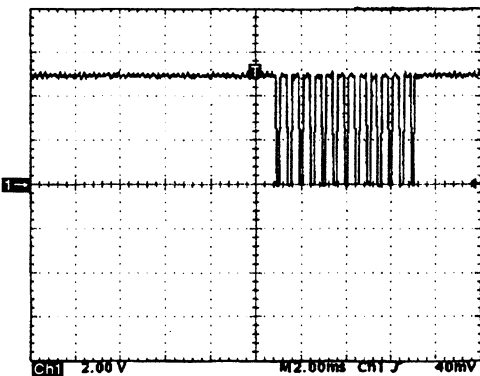
⑬ CK2K



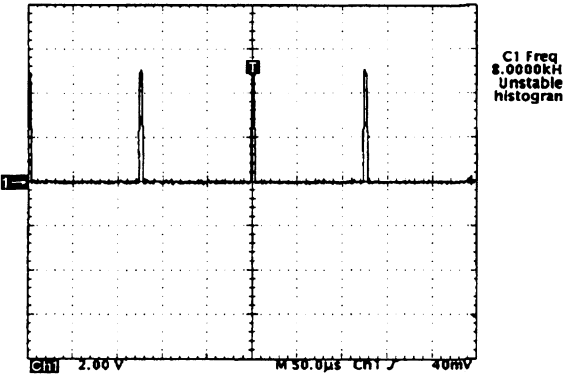
⑩ CK2M



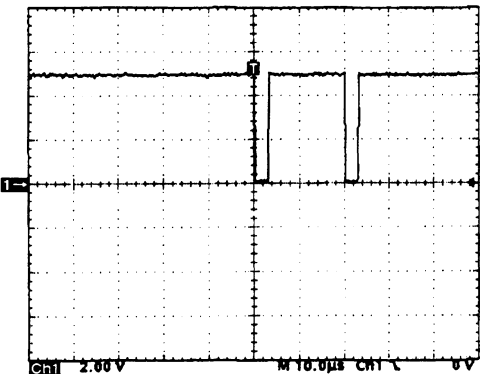
⑭ INT



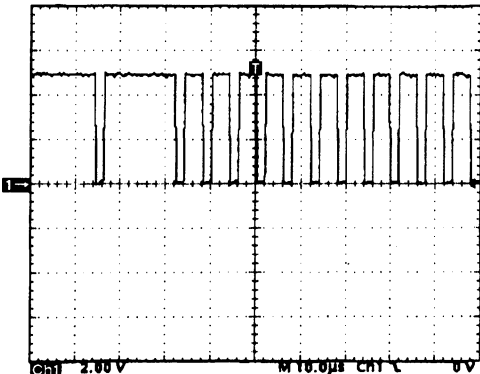
⑪ EP2



⑮ IOR



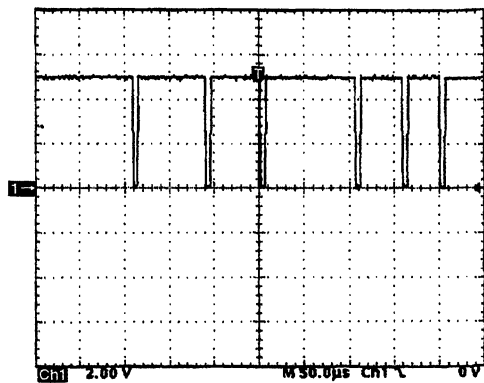
⑯ IOW



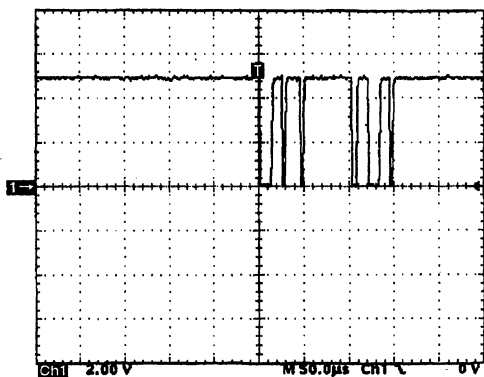
⑫ Not used



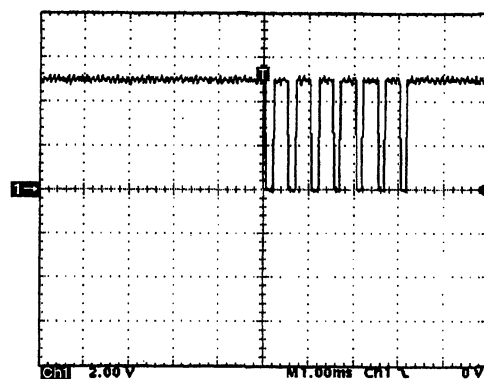
⑰ A0 ~ A1



⑱ D0 ~ D3

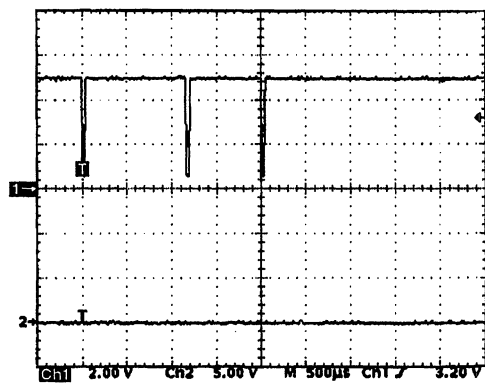


⑲ INT2

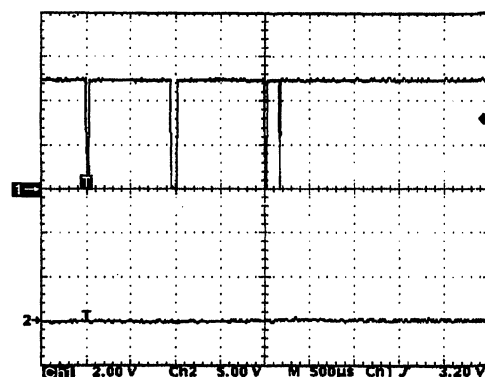


⑳ Not used

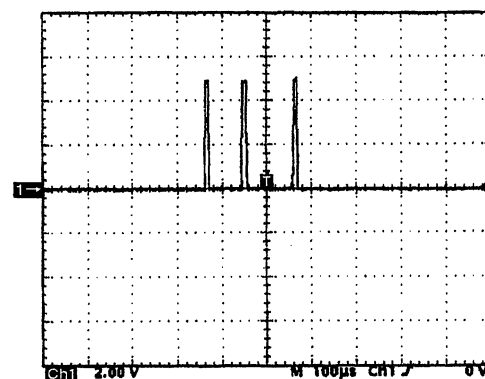
㉑ KEY INPUT SIGNAL  
(KEY ON, KEY OFF:5V)



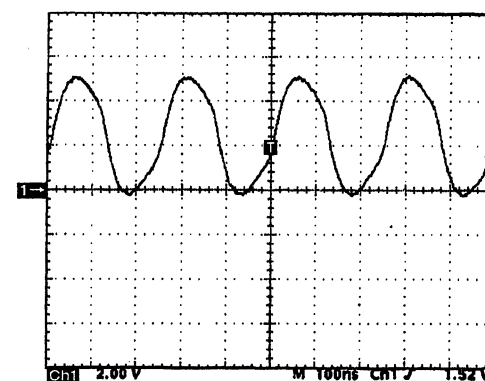
㉒ KEY CONTROL SIGNAL



㉓ LCD DATA

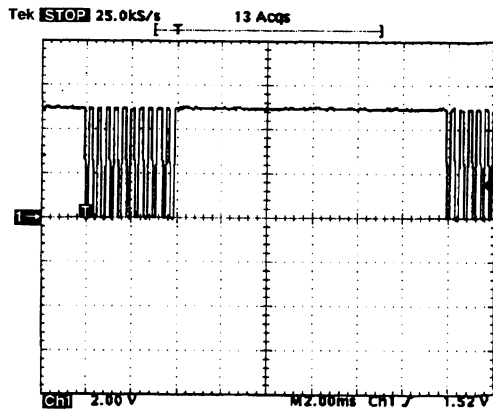


㉔ 4MHz CLOCK





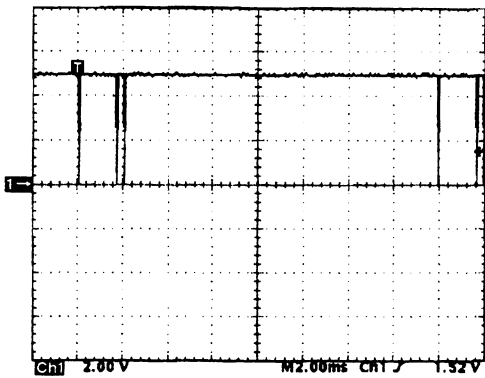
③③ ALE



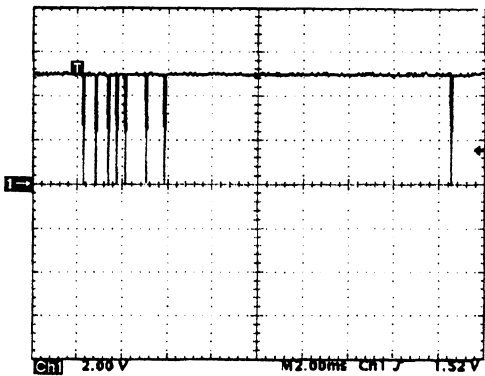
Note:

②⑤ ~ ③② Not used

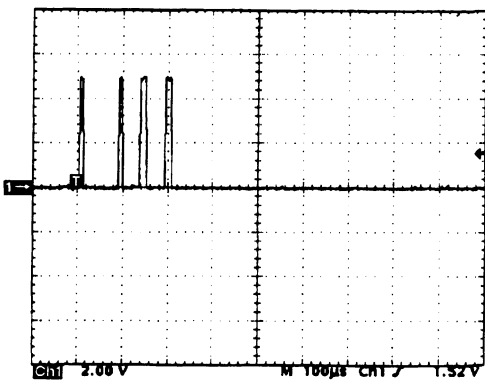
③④ INT



③⑤ -WR/STB



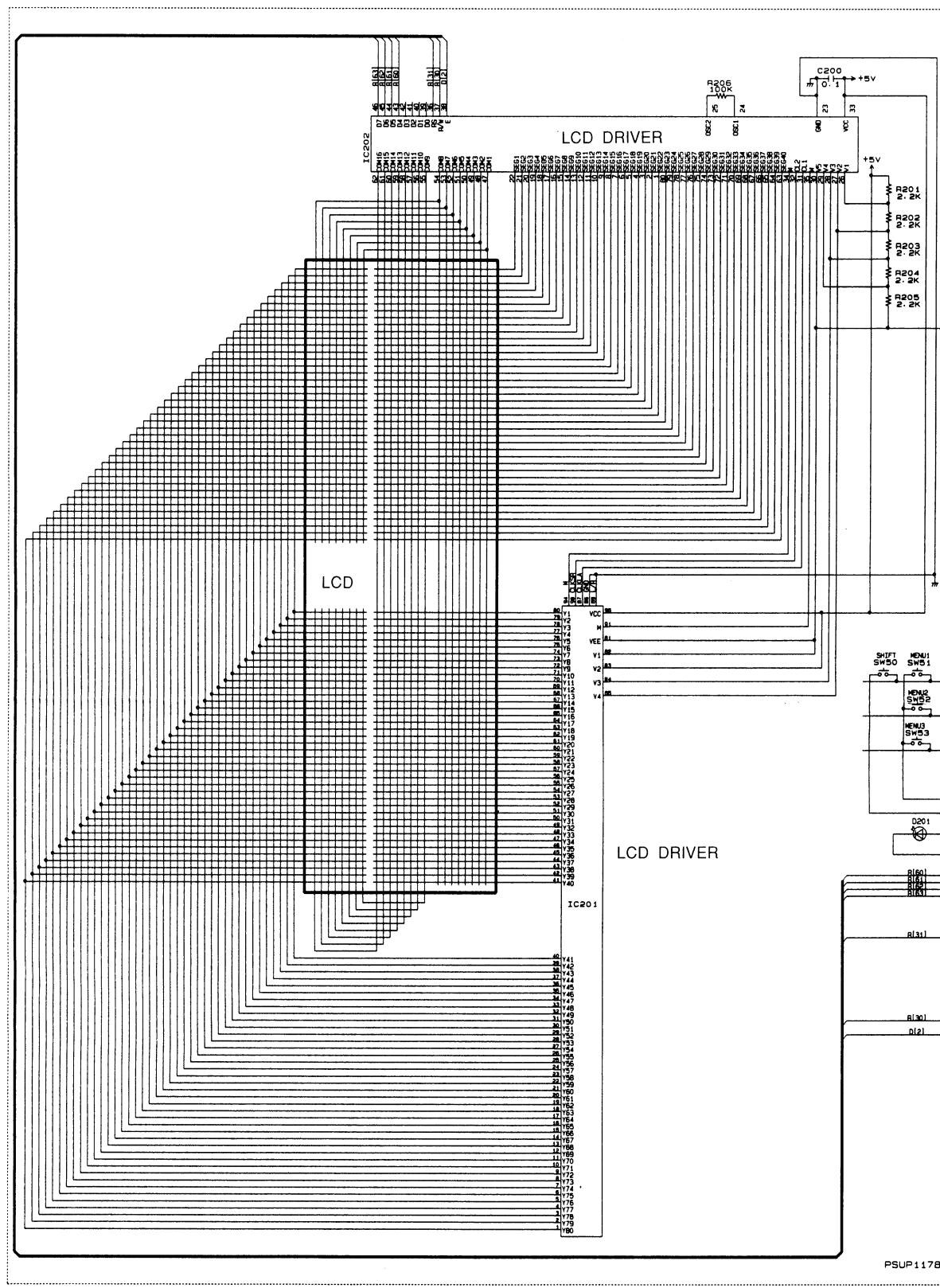
③⑥ -RD/SD0





1 2 3 4 5 6

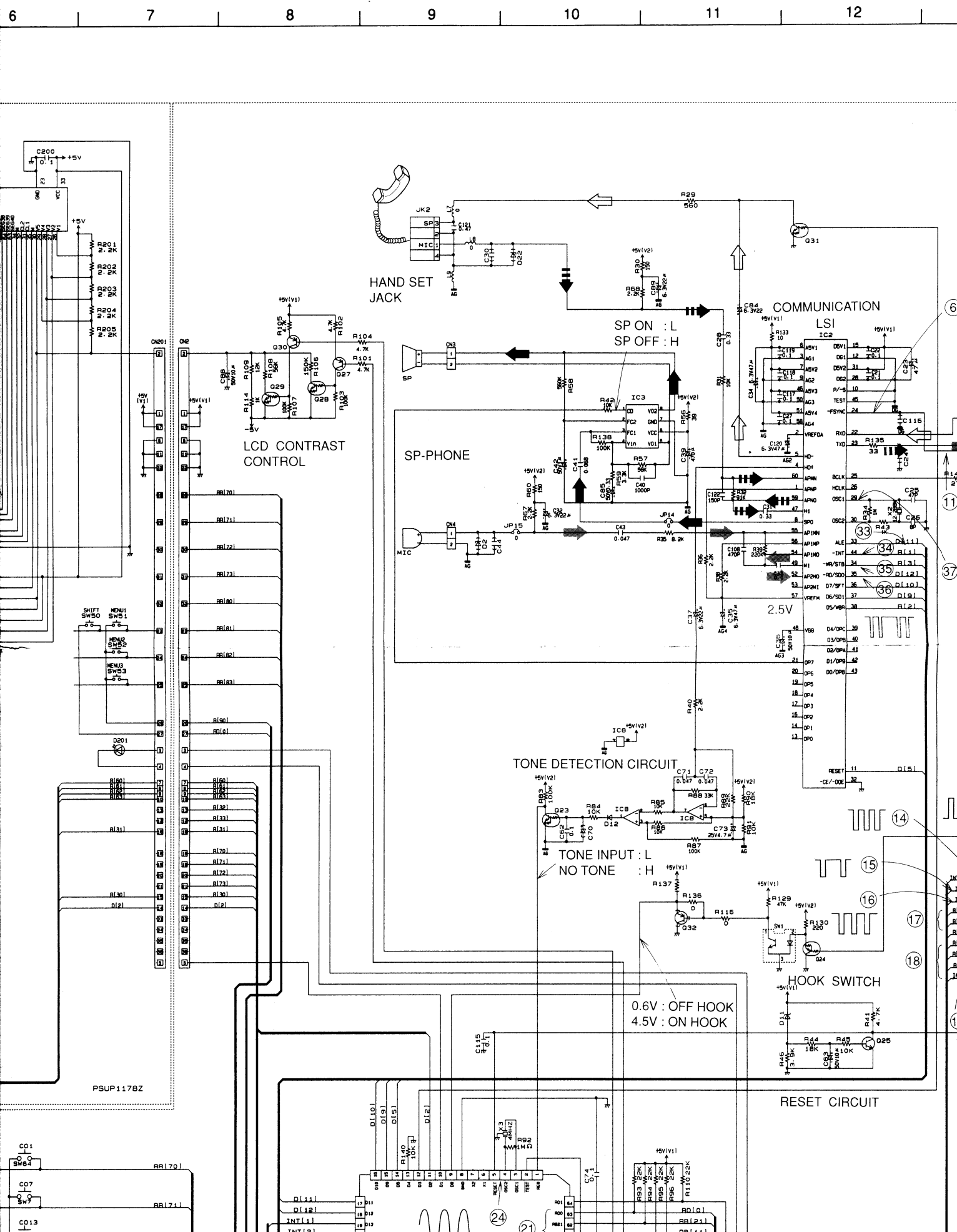
A  
B  
C  
D  
E  
F  
G  
H



PSUP11782



# SCHEMATIC DIAGRAM





13

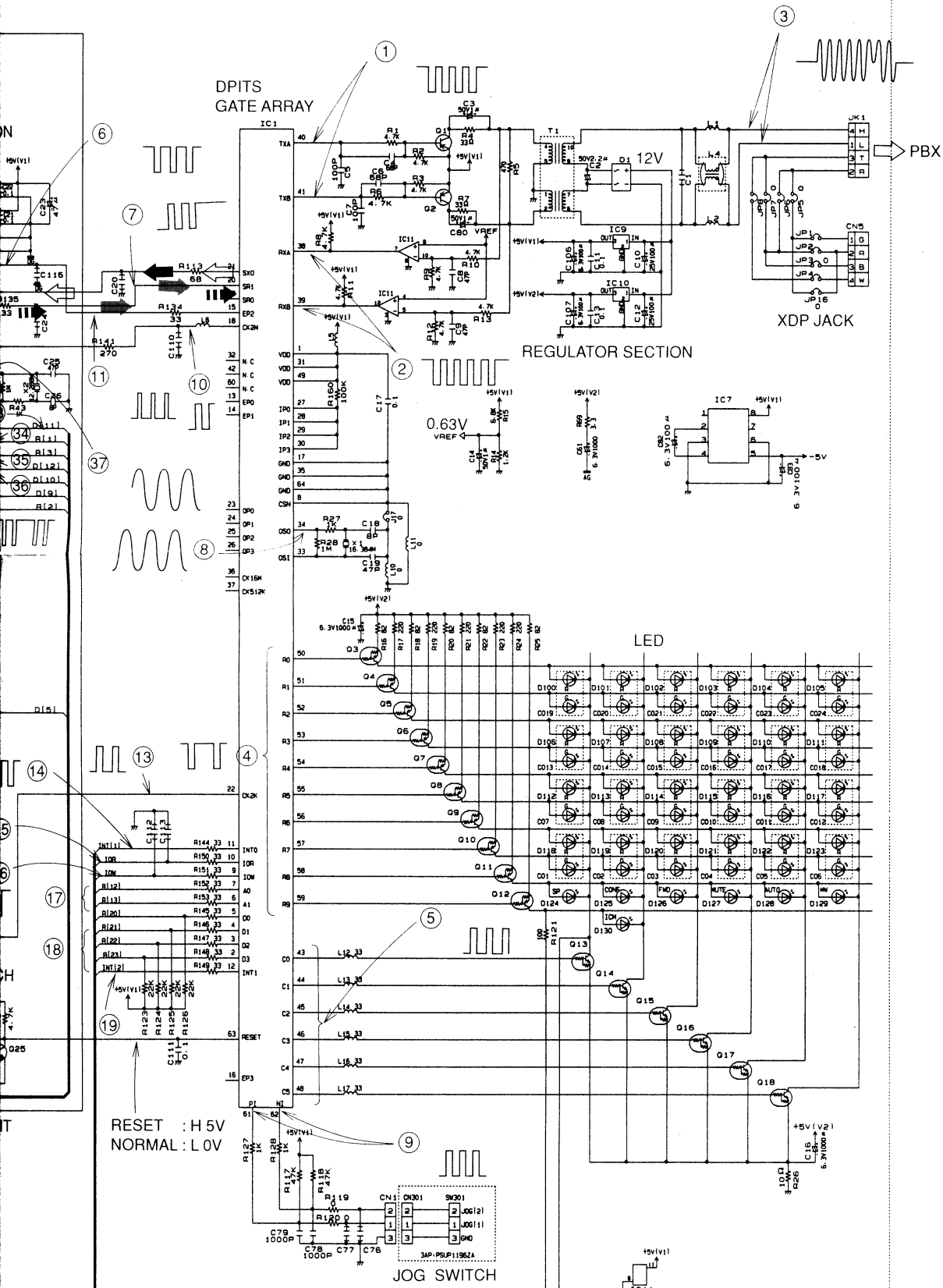
14

15

16

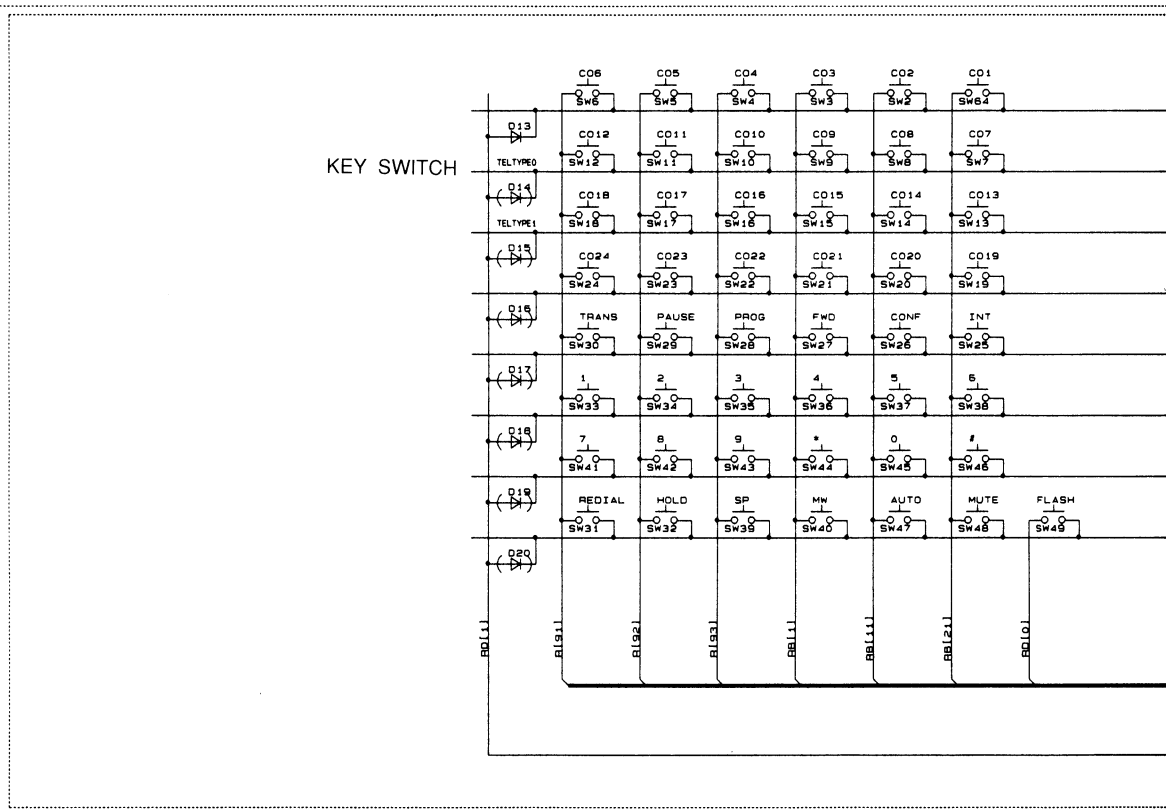
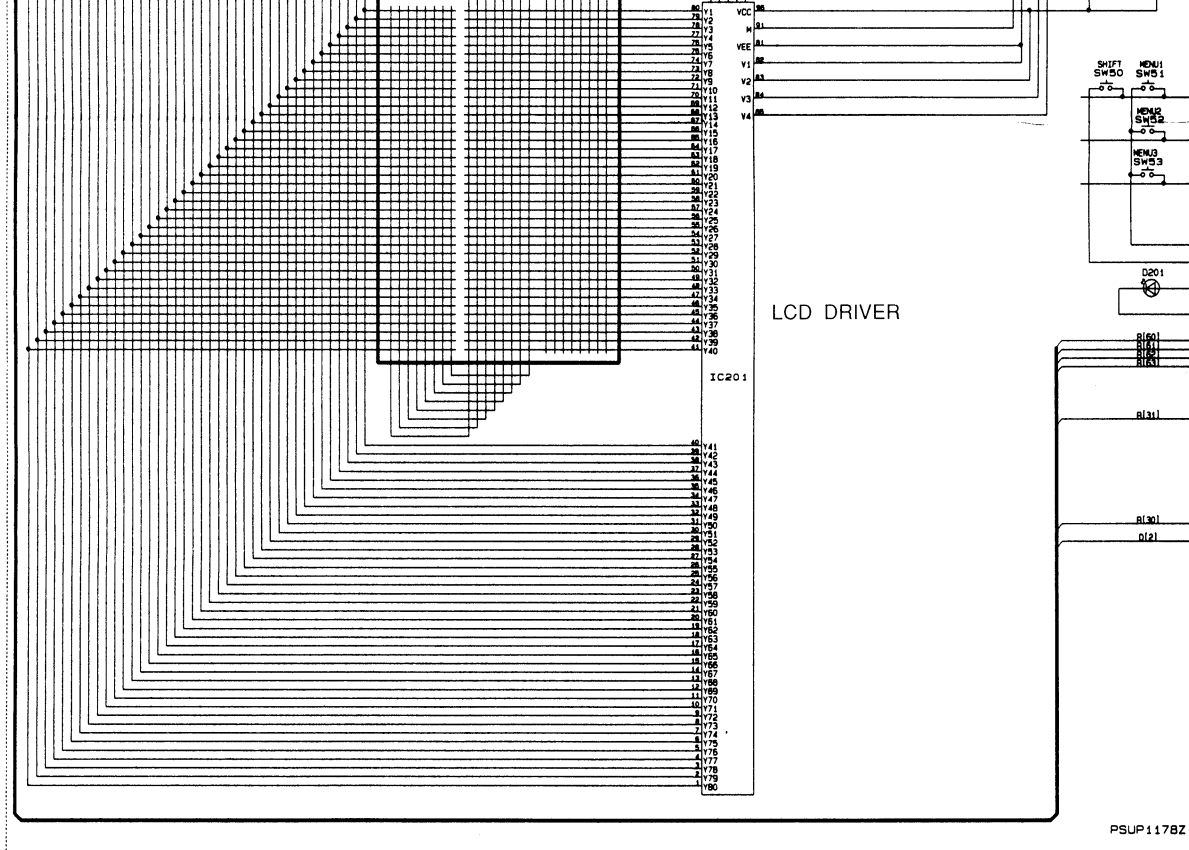
17

18

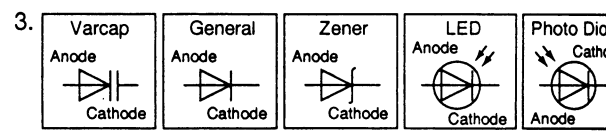




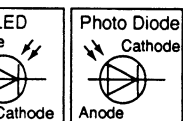
E  
F  
G  
H  
I  
J  
K  
L  
M



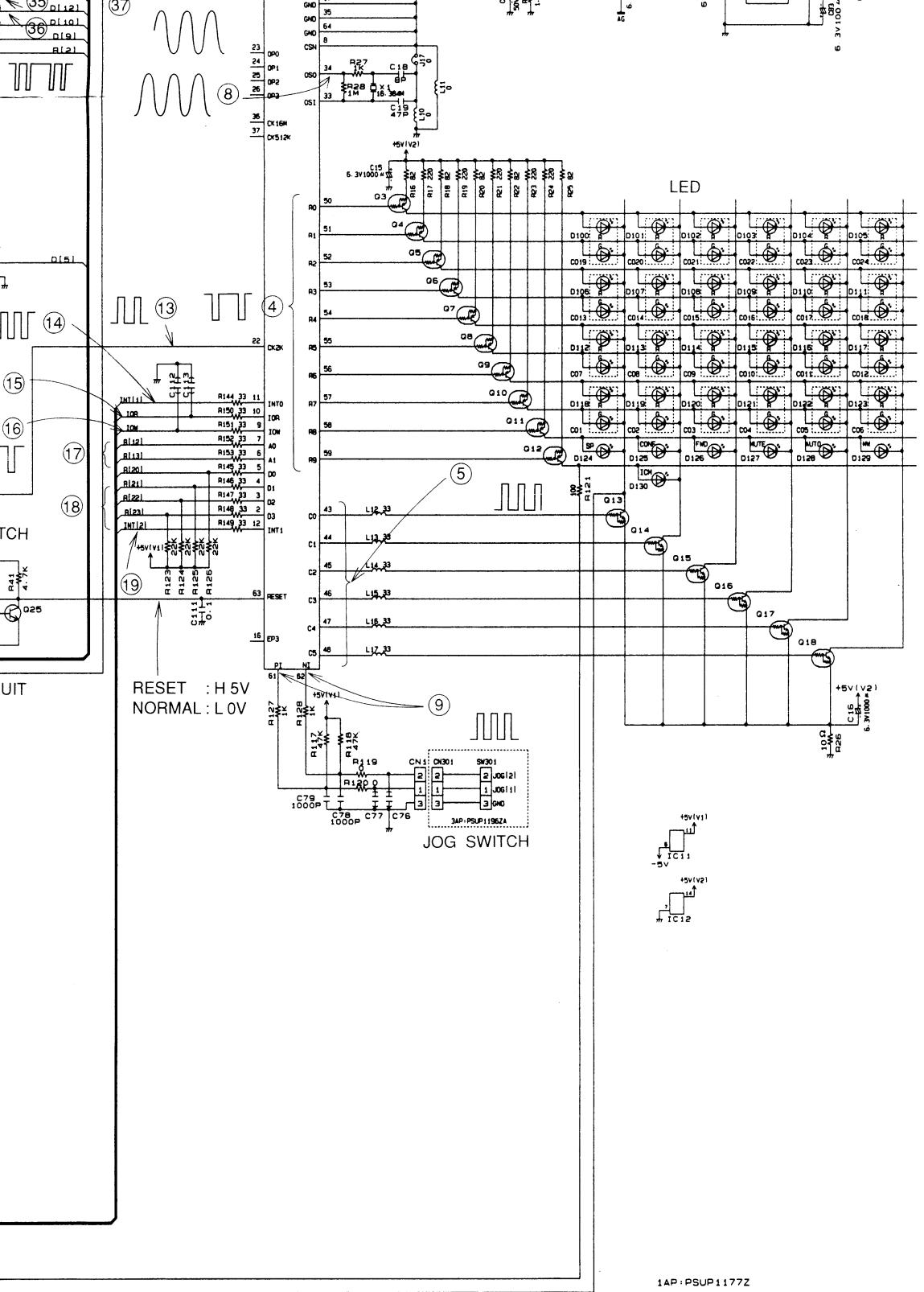
- Notes:**
1. DC voltage measurements are taken with oscilloscope from ground line.  
(Waiting condition)
  2. The schematic diagram may be modified at any time with the development of new technology.





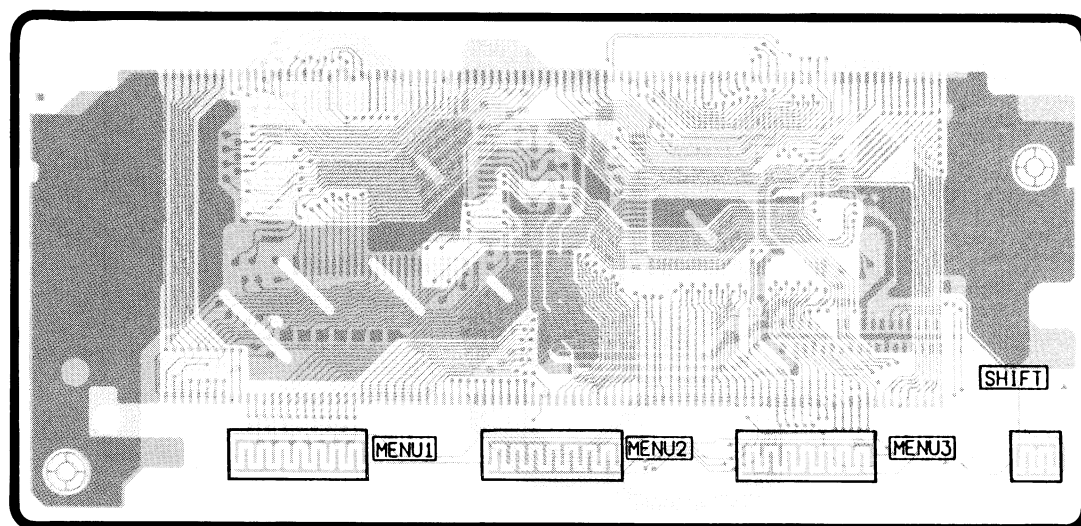






- ← SP-PHONE RECEPTION
- ← SP-PHONE TRANSMISSION
- ← HANDSET RECEPTION
- ← HANDSET TRANSMISSION

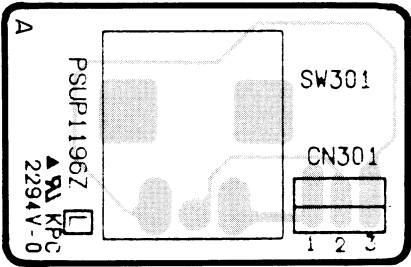






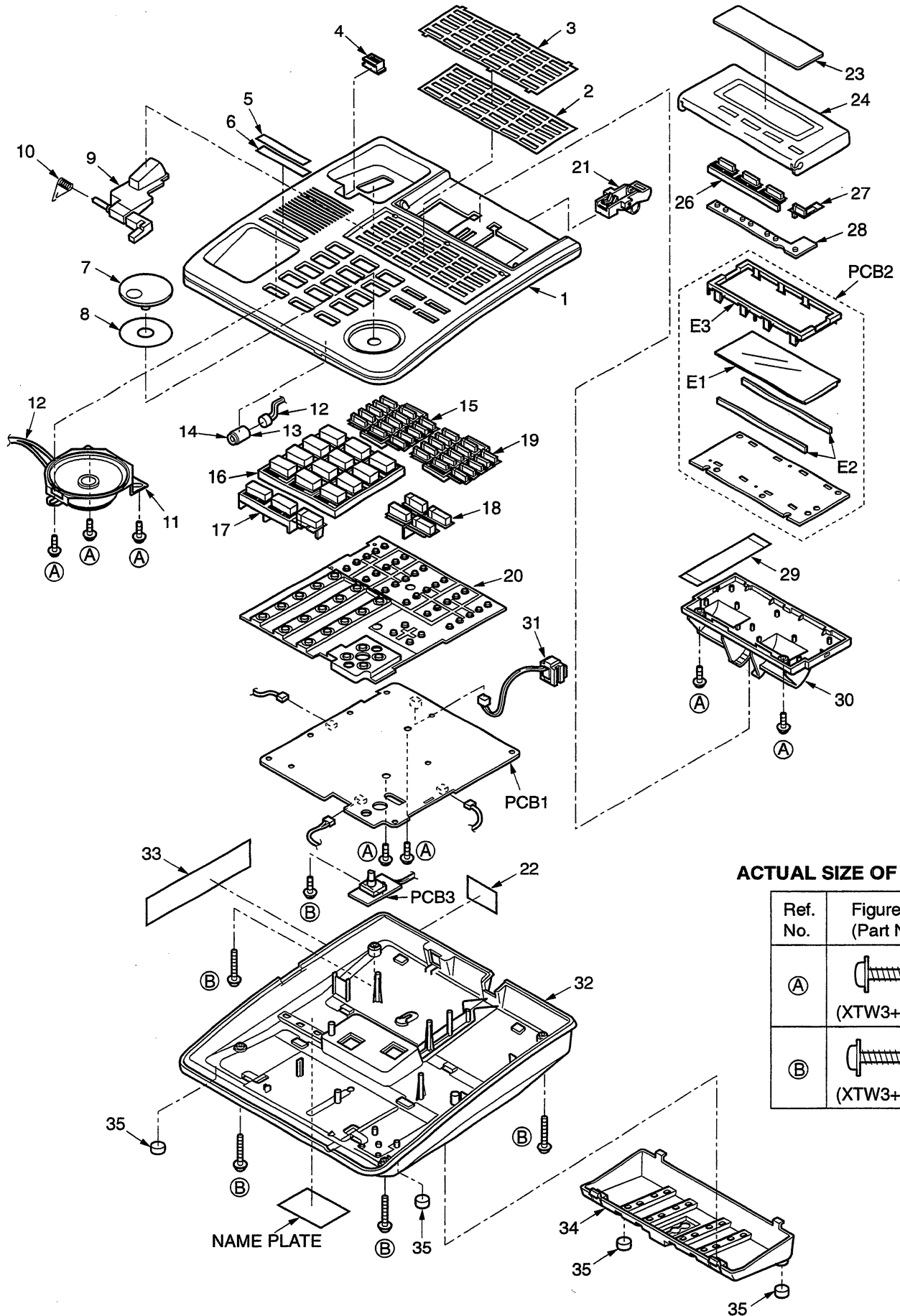
CIRCUIT BOARD

7 8 9 10 11 12

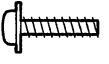
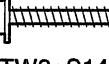




# CABINET AND ELECTRICAL PARTS LOCATION

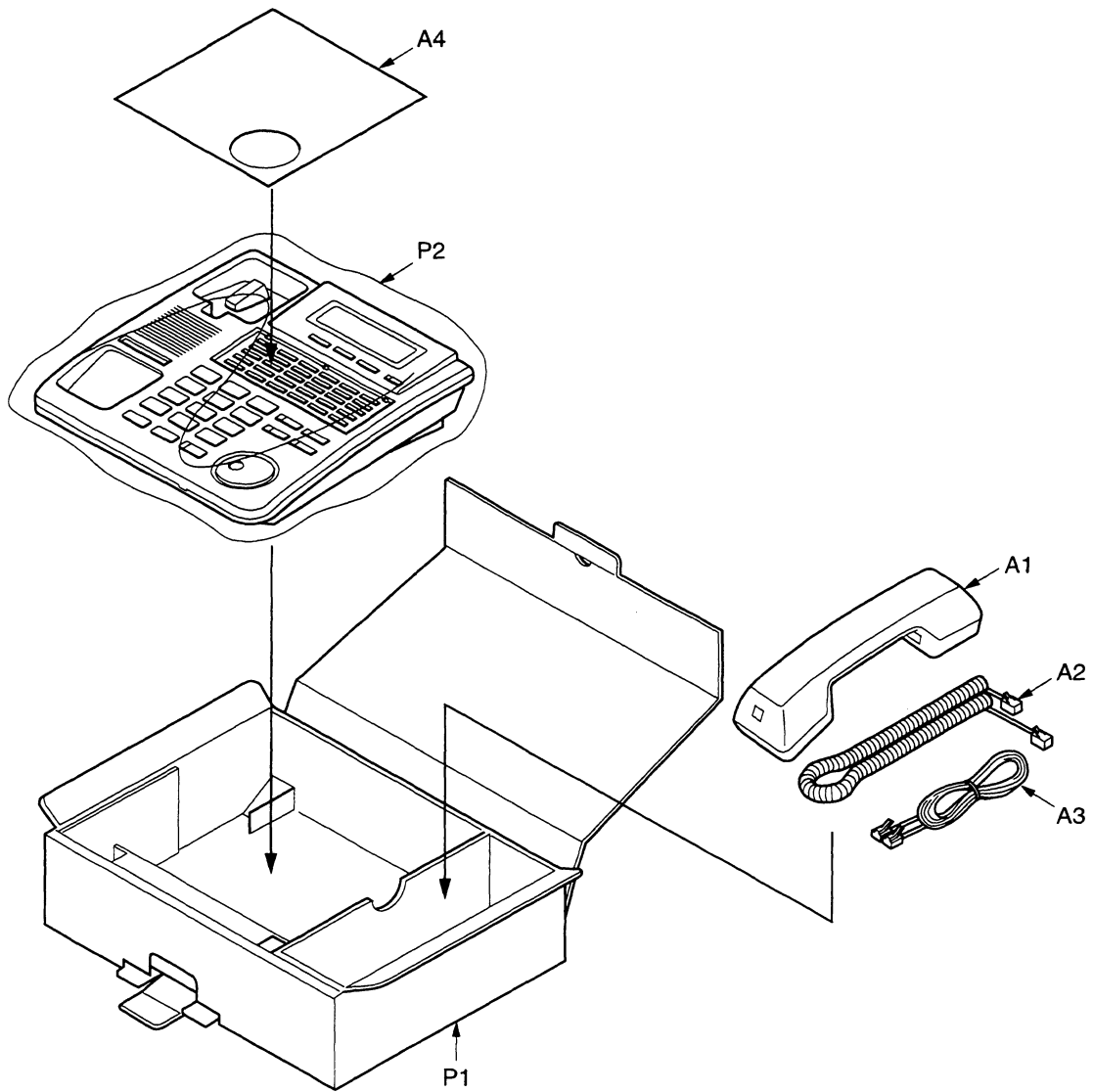


## ACTUAL SIZE OF SCREWS

Ref. No.	Figure (Part No.)
A	 (XTW3+S10P)
B	 (XTW3+S14P)



## ACCESSORIES AND PACKING MATERIALS





This replacement parts list is for KX-T7433C/T7433C-B only. Refer to the simplified manual (cover) for other areas.

### REPLACEMENT PARTS LIST

#### Model KX-T7433C/KX-T7433C-B

#### Notes:

1. The marking (RTL) indicates that the Retention Time is limited for this item.  
After the discontinuation of this assembly in production, the item will continue to be available for a specific period of time. The retention period of availability is dependent on the type of assembly, and in accordance with the laws governing part and product retention. After the end of this period, the assembly will no longer be available.

2. The S mark indicates service standard parts and may differ from production.

#### 3. RESISTORS & CAPACITORS

Unless otherwise specified.

All resistors are in ohms (Ω) k=1000Ω, M=1000kΩ

All capacitors are in MICRO FARADS (μF) P=μF

\*Type & Wattage of Resistor

Type

ERC:Solid	ERX:Metal Film	PQ4R:Carbon
ERD:Carbon	ERG:Metal Oxide	ERS:Fusible Resistor
PQRD:Carbon	ER0:Metal Film	ERF:Cement Resistor

Wattage

10,16:1/8W	14,25:1/4W	12:1/2W	1:1W	2:2W	3:3W
------------	------------	---------	------	------	------

\*Type & Voltage of Capacitor

Type

ECFD:Semi-Conductor	ECCD,ECKD,ECBT,PQCB: Ceramic
EQCS:Styrol	ECQE,ECQV,ECQG: Polyster
PQCUV:Chip	ECEA,ECSZ: Electrolytic
EQCMS:Mica	ECQP: Polypropylene

Voltage

ECQ Type	ECQG ECQV Type	ECSZ Type	Others	
1H: 50V	05: 50V	0F:3.15V	0J :6.3V	1V :35V
2A:100V	1:100V	1A:10V	1A :10V	50,1H:50V
2E:250V	2:200V	1V:35V	1C :16V	1J :63V
2H:500V		0J:6.3V	1E,25:25V	2A :100V

Ref. No.	Part No.	Part Name & Description	Pcs
27	PSBC1013Z2	BUTTON, SHIFT (KX-T7433C-B)	1
28	PSSX1007Z	KEY SWITCH	1
29	PSJE1011Z	FLAT CABLE	1
30	PSKF1025Z1	CABINET, GRILL LOWER (KX-T7433C)	1
30	PSKF1025Z2	CABINET, GRILL LOWER (KX-T7433C-B)	1
31	PSJJ1T017Z	JACK, TEL.	1
32	PSKF1024Z1	CABINET, LOWER (KX-T7433C)	1
32	PSKF1024Z2	CABINET, LOWER (KX-T7433C-B)	1
33	PSQT1309X	LABEL, CAUTION (KX-T7433C)	1
33	PSQT1309W	LABEL, CAUTION (KX-T7433C-B)	1
34	PSKL1005Z1	STAND (KX-T7433C)	1
34	PSKL1005Z2	STAND (KX-T7433C-B)	1
35	PSHA1002Z	RUBBER PARTS, FOOT	4

#### ACCESSORIES AND PACKING MATERIALS

A1	PQJX2PS409Z	HANDSET (KX-T7433C)	1
A1	PQJX2PM409Z	HANDSET (KX-T7433C-B)	1
A2	PSJA1043Z	CORD, HANDSET (KX-T7433C)	1
A2	PSJA1043Y	CORD, HANDSET (KX-T7433C-B)	1
A3	PQJA48W	CORD, TEL.	1
A4	PSGD1040Z	CARD, OVERLAY	1
P1	PSPK1361Z	GIFT BOX (KX-T7433C)	1
P1	PSPK1413Z	GIFT BOX (KX-T7433C-B)	1
P2	PQPP170Z	BAG,POLYETHYLENE	1

#### MAIN BOARD PARTS

PCB1	PSWP1T7433C	MAIN BOARD ASS'Y (RTL)	1
IC1	PSVIBU65050D	(ICs)	1
IC2	PSVITC5324F2	IC	1
IC3	PQVIMC34119D	IC	1
IC6	PSVI40612A04	IC	S 1
IC7	PQVINJU7660M	IC	1
IC8	PQVINJM2904F	IC	S 1
IC9,10	PSVIBA05FP	IC	2
IC11	PQVINJM319V	IC	1
SW1	PSVII24019T1	IC	1
Q1,2	2SA1576Q	(TRANSISTORS)	2
Q3-12	PQVTDTA143XU	TRANSISTOR(SI)	10
Q13-18	PQVTDTD133HK	TRANSISTOR(SI)	6
Q23	UN5213	TRANSISTOR(SI)	S 1
Q24	PQVTDTA143XU	TRANSISTOR(SI)	1
Q25	2SC4081Q	TRANSISTOR(SI)	1
Q27	2SA1576Q	TRANSISTOR(SI)	1
Q28,29	UN5213	TRANSISTOR(SI)	S 2
Q30	2SA1576Q	TRANSISTOR(SI)	1
Q31	PQVTFB1J3P	TRANSISTOR(SI)	1
D1	PQVDS1ZB60F1	(DIODES)	1
D3-10	RLS71	DIODE(SI)	8
D11	PSVDUDZ39B	DIODE(SI)	1
D12,13	RLS71	DIODE(SI)	2
D100-123	PQVDPY1204	LED	S 24
D124-129	PQVDBR1102W	LED	S 6
D130	PQVDPY1102	LED	1
CN1	PSJP03A05Z	(CONNECTORS)	1
CN2	PSJS36A61Z	CONNECTOR, 3P	1
CN3,4	PSJP02A05Z	CONNECTOR, 36P	2
CN5	PSJP04A05Z	CONNECTOR, 2P	1

Ref. No.	Part No.	Part Name & Description	Pcs
CABINET AND ELECTRICAL PARTS			
1	PSKM1052Z1	CABINET BODY (KX-T7433C)	1
1	PSKM1052Z2	CABINET BODY (KX-T7433C-B)	1
2	PSGD1026Z	CARD, DIAL (KX-T7433C)	1
2	PSGD1033Z	CARD, DIAL (KX-T7433C-B)	1
3	PSHR1134Z	TRANSPARENT PLATE	1
4	PQKE82X1	HANGER (KX-T7433C)	1
4	PQKE82X3	HANGER (KX-T7433C-B)	1
5	PQHR576Z	TRANSPARENT PLATE	1
6	PQHP532X	CARD, TEL. NO.	1
7	PSBC1012Z1	BUTTON, JOG DIAL (KX-T7433C)	1
7	PSBC1012Z2	BUTTON, JOG DIAL (KX-T7433C-B)	1
8	PSHR1164Z	SPACER	1
9	PSBH1002Z1	BUTTON, HOOK (KX-T7433C)	1
9	PSBH1002Z2	BUTTON, HOOK (KX-T7433C-B)	1
10	PSUS1006Z	SPRING	1
11	PQAS65P28Z	SPEAKER	1
12	PSJS02Q35Z	CONNECTOR	2
13	RJM142Z	MICROPHONE	S 1
14	PSHG1122Z	RUBBER PARTS, MIC COVER	1
15	PSBX1041Z1	BUTTON, 15KEY (KX-T7433C)	1
15	PSBX1041Z2	BUTTON, 15KEY (KX-T7433C-B)	1
16	PSBX1039Z1	BUTTON, DIAL (KX-T7433C)	1
16	PSBX1039Z2	BUTTON, DIAL (KX-T7433C-B)	1
17	PSYX1001Z1	BUTTON, 3KEY (KX-T7433C)	1
17	PSYX1001Z2	BUTTON, 3KEY (KX-T7433C-B)	1
18	PSBX1042Z1	BUTTON, 4KEY (KX-T7433C)	1
18	PSBX1042Z2	BUTTON, 4KEY (KX-T7433C-B)	1
19	PSBX1052Z1	BUTTON, 15KEY (KX-T7433C)	1
19	PSBX1052Z2	BUTTON, 15KEY (KX-T7433C-B)	1
20	PSSX1006Z	KEY SWITCH	1
21	PSBE1002Z1	BUTTON, ADJUST (KX-T7433C)	1
21	PSBE1002Z2	BUTTON, ADJUST (KX-T7433C-B)	1
22	PQQT11166Z	LABEL, NOTE	1
23	PSGP1024Z1	PANEL, LCD (KX-T7433C)	1
23	PSGP1024Z2	PANEL, LCD (KX-T7433C-B)	1
24	PSGG1005Z1	GRILLE (KX-T7433C)	1
24	PSGG1005Z2	GRILLE (KX-T7433C-B)	1
25	Not Used		
26	PSBX1044Z1	BUTTON, 3KEY (KX-T7433C)	1
26	PSBX1044Z2	BUTTON, 3KEY (KX-T7433C-B)	1
27	PSBC1013Z1	BUTTON, SHIFT (KX-T7433C)	1



This replacement parts list is for KX-T7433C/T7433C-B only. Refer to the simplified manual (cover) for other areas.

Ref. No.	Part No.	Part Name & Description	Pcs	Ref. No.	Part No.	Part Name & Description	Pcs
(CAPACITORS)				(RESISTORS)			
C2	ECEV1HA2R2N	2.2	1	JP3	PQ4R18XJ000	0	1
C3	PSCEV1HA010	1	1	JP5	PQ4R18XJ000	0	1
C4	ECUV1H680JCV	68P	1	JP7	PQ4R18XJ000	0	1
C5	ECUV1H101JCV	100P	1	JP14,15	ERJ3GEY0R00	0	2
C6	ECUV1H680JCV	68P	1	JP16	PQ4R18XJ000	0	1
C7	ECUV1H101JCV	100P	1	J17	ERJ3GEY0R00	0	1
C8,9	ECUV1H470JCV	47P	2	L7,8	PQ4R10XJ000	0	2
C10	PSCEV1EA101	100	1	L10-17	ERJ3GEY0R00	0	8
C11	PQCUV1E104MD	0.1	S 1	R1,2,3	ERJ3GEYJ472	4.7K	3
C12	PSCEV1EA101	100	1	R4	ERJ3GEYJ330	33	1
C13	PQCUV1E104MD	0.1	S 1	R5	ERJ3GEYJ471	470	1
C14	PSCEV1HA010	1	1	R6	ERJ3GEYJ472	4.7K	1
C15,16	PSCEV0JA102	1000	2	R7	ERJ3GEYJ330	33	1
C17	PQCUV1E104MD	0.1	S 1	R8,9	ERJ3GEYJ472	4.7K	2
C18	ECUV1H080DCV	8P	1	R10-13	ERJ3GEYJ472	4.7K	4
C19	ECUV1H470JCV	47P	1	R14	ERJ3GEYJ122	1.2K	1
C21,22	ECUV1H104ZV	0.1	S 2	R15	ERJ3GEYJ682	6.8K	1
C23	PSCEV0JA470	47	1	R16	ERJ3GEYJ820	82	1
C25	ECUV1H470JCV	47P	1	R17	ERJ3GEYJ221	220	1
C26	ECUV1H080DCV	8P	1	R18	ERJ3GEYJ820	82	1
C27	ECUV1H104ZV	0.1	S 1	R19	ERJ3GEYJ221	220	1
C28	PQCUV1C334ZF	0.33	1	R20	ERJ3GEYJ820	82	1
C31	PQCUV1C334ZF	0.33	1	R21	ERJ3GEYJ221	220	1
C32	PSCEV0JA220	22	1	R22	ERJ3GEYJ820	82	1
C33	PQCUV1E104MD	0.1	1	R23,24	ERJ3GEYJ221	220	2
C34,35	PSCEV0JA470	47	2	R25	ERJ3GEYJ820	82	1
C36	PSCEV1HA100	10	1	R26	PQ4R18XJ100	10	1
C37	PSCEV0JA220	22	1	R27	ERJ3GEYJ102	1K	1
C39	PSCEV0JA471	470	1	R28	ERJ3GEYJ105	1M	1
C40	PQCUV1H102J	0.001	S 1	R29	ERJ3GEYJ561	560	1
C41	PQCUV1H683KB	0.068	1	R30	ERJ3GEYJ151	150	1
C42	PSCEV1HA010	1	1	R31	ERJ3GEYJ103	10K	1
C43	PQCUV1E473MD	0.047	S 1	R32	ERJ3EKF9102	91K	1
C61	PSCEV0JA102	1000	1	R34	ERJ3GEYJ105	1M	1
C62	PQCUV1E104MD	0.1	1	R35	ERJ3GEYJ822	8.2K	1
C63	PSCEV1HA100	10	1	R36	ERJ3GEYJ222	2.2K	1
C71,72	PQCUV1E473MD	0.047	S 2	R38	ERJ3GEYJ222	2.2K	1
C73	PSCEV1EA4R7	4.7	1	R39	ERJ3GEYJ224	220K	1
C74	PQCUV1E104MD	0.1	S 1	R40	ERJ3GEYJ222	2.2K	1
C78,79	ECUV1E102JCV	0.001	2	R41	ERJ3GEYJ472	4.7K	1
C80	PSCEV1HA010	1	1	R42	ERJ3GEYJ103	10K	1
C82,83	PSCEV0JA101	100	2	R43	ERJ3GEYJ102	1K	1
C84	PSCEV0JA220	22	1	R44	ERJ3GEYJ183	18K	1
C85	PSCEV1HAR33	0.33	1	R45	ERJ3GEYJ103	10K	1
C88	PSCEV1HA100	10	1	R46	ERJ3GEYJ392	3.9K	1
C89	PSCEV0JA220	22	1	R56	PQ4R18XJ390	39	1
C106,107	PSCEV0JA101	100	2	R57	ERJ3GEYJ563	56K	1
C108	ECUV1H471JCV	470P	1	R58	ERJ3GEYJ564	560K	1
C111	ECUV1H104ZV	0.1	S 1	R59	ERJ3GEYJ332	3.3K	1
C115	ECUV1H104ZV	0.1	S 1	R60	ERJ3GEYJ151	150	1
C117,118	ECUV1H104ZV	0.1	S 2	R67,68	ERJ3GEYJ222	2.2K	2
C119	ECUV1H104ZV	0.1	S 1	R69	PQ4R18XJ3R3	3.3	1
C120	PSCEV0JA470	47	1	R83	ERJ3GEYJ104	100K	1
C121	PQCUV1C474ZF	0.47	1	R84,85,86	ERJ3GEYJ103	10K	3
C122	ECUV1H151JCV	150P	1	R87	ERJ3GEYJ104	100K	1
(JACKS)				R88	ERJ3GEYJ333	33K	1
JK1	PSJJ1T011Z	JACK	1	R89	ERJ3GEYJ223	22K	1
JK2	PSJJ1T012Z	JACK	1	R90	ERJ3GEYJ183	18K	1
(COIL)				R91	ERJ3GEYJ103	10K	1
L1,2	PQLQR1LT	COIL	2	R92	ERJ3GEYJ105	1M	1
L5,6	PQLQR1RM601	COIL	2	R93-99	ERJ3GEYJ223	22K	7
L9	PQLQR1LT	COIL	1	R100	ERJ3GEYJ223	22K	1
				R101,102	ERJ3GEYJ472	4.7K	2
				R103	ERJ3GEYJ104	100K	1
				R104,105	ERJ3GEYJ472	4.7K	2
				R106	ERJ3GEYJ154	150K	1
				R107	ERJ3GEYJ104	100K	1
				R108	ERJ3GEYJ563	56K	1
				R109	ERJ3GEYJ123	12K	1



**This replacement parts list is for KX-T7433C/T7433C-B only. Refer to the simplified manual (cover) for other areas.**

Ref. No.	Part No.	Part Name & Description	Pcs	Ref. No.	Part No.	Part Name & Description	Pcs
R110	ERJ3GEYJ223	22K	1	SWITCH BOARD PARTS			
R113	ERJ3GEYJ680	68	1	PCB3	PSWP3T7431C	SWITCH BOARD ASS'Y (RTL)	1
R114	ERJ3GEYJ102	1K	1				
R116	ERJ3GEY0R00	0	1	SW301	PSSRCA101Z	(SWITCH) SWITCH	1
R117,118	ERJ3GEYJ473	47K	2				
R119	ERJ3GEY0R00	0	1	CN301	PSJS03Q36Z	(CONNECTOR) CONNECTOR, 3P	1
R120	ERJ3GEY0R00	0	1				
R121	ERJ3GEYJ101	100	1				
R123-126	ERJ3GEYJ223	22K	4				
R127,128	ERJ3GEYJ102	1K	2				
R129	ERJ3GEYJ473	47K	1				
R130	ERJ3GEYJ221	220	1				
R131,132	ERJ3GEYJ330	33	2				
R133	PQ4R18XJ100	10	1				
R134,135	ERJ3GEYJ330	33	2				
R136	ERJ3GEY0R00	0	1				
R138	ERJ3GEYJ104	100K	1				
R139	ERJ3GEYJ103	10K	1				
R140	ERJ3GEYJ103	10K	1				
R141	ERJ3GEYJ271	270	1				
R144-153	ERJ3GEYJ330	33	10				
R160	ERJ3GEYJ104	100K	1				
T1	PSLT9Z4A	(TRANSFORMER) TRANSFORMER	1				
X1	PSVCCR1638B7	(CRYSTAL OSCILLATORS & CERAMIC FILTER) CRYSTAL OSCILLATOR	1				
X2	PSVCCR1228B7	CRYSTAL OSCILLATOR	1				
X3	PQVBTC54.00M	CERAMIC FILTER	1				
LCD BOARD PARTS							
PCB2	PSWP2T7533G	LCD BOARD ASS'Y (RTL)	1				
IC201	PQVILC7931D	(ICs) IC	1				
IC202	PSVI44780B24	IC	1				
D201	PSVD111R820R	(DIODE) LED	S 1				
CN201	PSJS36A61Z	(CONNECTOR) CONNECTOR, 36P	1				
C200	PQCUV1E104MD	(CAPACITORS) 0.1	S 1				
R201-205	PQ4R10XJ222	(RESISTORS) 2.2K	5				
R206	PQ4R10XJ104	100K	1				
E1	EDD104U32AAG	(OTHERS) LIQUID CRYSTAL DISPLAY	1				
E2	PSSE1011Z	CONNECTOR	2				
E3	PSHR1132Z	GUIDE	1				



ORDER NO. KMS0104113S1

F5

# Service Manual

DIGITAL PROPRIETARY TELEPHONE



**KX-T7433C / KX-T7433C-B / KX-T7436C / KX-T7436C-B**  
(for Canada)

Please file and use this supplement manual together with the Service Manual for Model No.KX-T7433C, KX-T7433C-B Order No.KMS9809311C1 and KX-T7436C, KX-T7436C-B Order No.KMS9809312C1.

© 2001 Kyushu Matsushita Electric Co., Ltd. All rights reserved.  
Unauthorized copying and distribution is a violation of law.

## WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

# Panasonic

Note: Supplement-1~3 have already supplied with printed matter. So please refer to that.

1. T7433C\_SUP-4 (KMS0009909S1)
2. T7433C-B\_SUP-4 (KMS0009910S1)
3. T7436C\_SUP-4 (KMS0009911S1)



## 4. T7436C-B\_SUP-4 (KMS0009912S1)

## 5. SUP-5 (KMS0104113S1)

### 5.1. CHANGES

#### 5.1.1. REPLACEMENT PARTS LIST

Reason for Change (Symbol:A) Following 1-8 reasons are indicated on the Notes in the bottom co	
1. Improve performance	Remark: 1. Mark *1 has been changed at the same time. 2. Mark *2 has been changed at the same time.
2. Change of material or dimension	
3. To meet approved specification	
4. Standardization	
5. Addition	
6. Deletion	
7. Correction	
8. Other	

Interchangeability Code (Symbol:B) Following V-Z interchangeabilities are indicated on the Notes bottom column.		
Parts	Set Production	
V Original New	Early (before change) Late (after change)	Original or new parts may be used in early or late produc Use original parts until exhausted, then stock new parts.
W Original New	Early (before change) Late (after change)	Original parts may be used in early production sets only. parts may be used in early or late production sets. Use o parts where possible, then stock new parts.
X Original New	Early (before change) Late (after change)	New parts only may be used in early or late production s Stock new parts.
Y Original New	Early (before change) Late (after change)	Original parts may be used in early production sets only. parts may be used in late production sets only. Stock bo original and new parts.
Z Other		

KX-T7433C, KX-T7433C-B



Ref. No.	Parts No.		Part Name & description	Pcs	Remarks	Notes		
	Original Part	New part						
CABINET AND ELECTRICAL PARTS								
28	PSSX1007Z	PSSX1007Y	KEY SWITCH	1		8	V	
MAIN BOARD PARTS								
C18	ECUV1H080DCV	ECUV1H180JCV	CAPACITOR, 18pF	1	*1	8	X	
C19	ECUV1H470JCV	ECUV1H180JCV	CAPACITOR, 18pF	1	*1	8	X	
X1	PSVCCR1638B7	PSVCC0025GT	CRYSTAL OSCILLATOR	1	*1	8	X	
X2	PSVCCR1228B7	PSVCC0031GT	CRYSTAL OSCILLATOR	1	*1	8	X	
LCD BOARD PARTS								
E3	PSHR1132Z	PSHR1132Y	GUIDE	1		8	V	

KX-T7436C, KX-T7436C-B

Ref. No.	Parts No.		Part Name & description	Pcs	Remarks	Notes	
	Original Part	New part					
CABINET AND ELECTRICAL PARTS							
28	PSSX1008Z	PSSX1008Y	KEY SWITCH	1		8	V
MAIN BOARD PARTS							
C18	ECUV1H080DCV	ECUV1H180JCV	CAPACITOR, 18pF	1	*2	8	X
C19	ECUV1H470JCV	ECUV1H180JCV	CAPACITOR, 18pF	1	*2	8	X
X1	PSVCCR1638B7	PSVCC0025GT	CRYSTAL OSCILLATOR	1	*2	8	X
X2	PSVCCR1228B7	PSVCC0031GT	CRYSTAL OSCILLATOR	1	*2	8	X
LCD BOARD PARTS							
E3	PSHR1133Z	PSHR1133Y	GUIDE	1		8	V

N.T. / KXT7433C, KXT7433CB / KXT7436C, KXT7436CB



# Service Manual

DIGITAL PROPRIETARY TELEPHONE

**KX-T7433C**

(for Canada)

*Supplement-4*

Please file and use this supplement manual together with the service manual for model No. KX-T7433C, KX-T7433C-B Order No.KMS9809311C1.

## **WARNING**

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

**Note:**Supplement-1~3 have already supplied with printed matter. So please refer to that.





# Panasonic

© 2000 Kyushu Matsushita Electric Co., Ltd. All rights reserved. Unauthorized copying and distribution is a violation of law.



# 1 CHANGES

## 1.1. REPLACEMENT PARTS LIST

Reason for Change (Symbol:A) Following 1-8 reasons are indicated on the Notes in the bottom column.		
1. Improve performance		
2. Change of material or dimension		
3. To meet approved specification		
4. Standardization		
5. Addition		
6. Deletion		
7. Correction		
8. Other		
Interchangeability code (Symbol:B) Following V-Z interchangeabilities are indicated on the Notes in the bottom column.		
Parts	Set Production	Description
V Original New	 Early (before change) Late (after change)	Original or new parts may be used in early or late production sets. Use original parts until exhausted, then stock new parts.
W Original New	 Early (before change) Late (after change)	Original parts may be used in early production sets only. New parts may be used in early or late production sets. Use original parts where possible, then stock new parts.
X Original New	 Early (before change) Late (after change)	New parts only may be used in early or late production sets. Stock new parts.
Y Original New	 Early (before change) Late (after change)	Original parts may be used in early production sets only. New parts may be used in late production sets only. Stock both original and new parts.
Z Other		

Ref. No.	Parts No.		Part Name & description	Pcs	Remarks	Notes	Time of change (Suffix)
	Original Part	New part					
ACCESSORIES AND PACKING MATERIALS							
P1	-----	PSPK1696Z	GIFT BOX (Made in Malaysia)	1		5	
MAIN BOARD PARTS							
SW1	PSVII24019T1	PSVII24019T2	IC	1		1	X



# Service Manual

DIGITAL PROPRIETARY TELEPHONE

**KX-T7433C-B**

(for Canada)

*Supplement-4*

Please file and use this supplement manual together with the service manual for model No. KX-T7433C, KX-T7433C-B Order No.KMS9809311C1.

## **WARNING**

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

**Note:**Supplement-1~3 have already supplied with printed matter. So please refer to that.





# Panasonic

© 2000 Kyushu Matsushita Electric Co., Ltd. All rights reserved. Unauthorized copying and distribution is a violation of law.



# 1 CHANGES

## 1.1. REPLACEMENT PARTS LIST

Reason for Change (Symbol:A) Following 1-8 reasons are indicated on the Notes in the bottom column.		
1. Improve performance		
2. Change of material or dimension		
3. To meet approved specification		
4. Standardization		
5. Addition		
6. Deletion		
7. Correction		
8. Other		
Interchangeability code (Symbol:B) Following V-Z interchangeabilities are indicated on the Notes in the bottom column.		
Parts	Set Production	Description
V Original New	 Early (before change) Late (after change)	Original or new parts may be used in early or late production sets. Use original parts until exhausted, then stock new parts.
W Original New	 Early (before change) Late (after change)	Original parts may be used in early production sets only. New parts may be used in early or late production sets. Use original parts where possible, then stock new parts.
X Original New	 Early (before change) Late (after change)	New parts only may be used in early or late production sets. Stock new parts.
Y Original New	 Early (before change) Late (after change)	Original parts may be used in early production sets only. New parts may be used in late production sets only. Stock both original and new parts.
Z Other		

Ref. No.	Parts No.		Part Name & description	Pcs	Remarks	Notes	Time of change (Suffix)
	Original Part	New part					
ACCESSORIES AND PACKING MATERIALS							
P1	-----	PSPK1697Z	GIFT BOX (Made in Malaysia)	1		5	
MAIN BOARD PARTS							
SW1	PSVII24019T1	PSVII24019T2	IC	1		1	X



# Service Manual

DIGITAL PROPRIETARY TELEPHONE

**KX-T7436C**

(for Canada)

*Supplement-4*

Please file and use this supplement manual together with the service manual for model No. KX-T7436C, KX-T7436C-B Order No.KMS9809312C1.

## **WARNING**

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

**Note:**Supplement-1~3 have already supplied with printed matter. So please refer to that.





# Panasonic

© 2000 Kyushu Matsushita Electric Co., Ltd. All rights reserved. Unauthorized copying and distribution is a violation of law.



# 1 CHANGES

## 1.1. REPLACEMENT PARTS LIST

Reason for Change (Symbol:A) Following 1-8 reasons are indicated on the Notes in the bottom column.			
1. Improve performance			
2. Change of material or dimension			
3. To meet approved specification			
4. Standardization			
5. Addition			
6. Deletion			
7. Correction			
8. Other			
Interchangeability code (Symbol:B) Following V-Z interchangeabilities are indicated on the Notes in the bottom column.			
Parts	Set Production	Description	
V	Original New 	Early (before change) Late (after change)	Original or new parts may be used in early or late production sets. Use original parts until exhausted, then stock new parts.
W	Original New 	Early (before change) Late (after change)	Original parts may be used in early production sets only. New parts may be used in early or late production sets. Use original parts where possible, then stock new parts.
X	Original New 	Early (before change) Late (after change)	New parts only may be used in early or late production sets. Stock new parts.
Y	Original New 	Early (before change) Late (after change)	Original parts may be used in early production sets only. New parts may be used in late production sets only. Stock both original and new parts.
Z	Other		

Ref. No.	Parts No.		Part Name & description	Pcs	Remarks	Notes	Time of change (Suffix)
	Original Part	New part					
MAIN BOARD PARTS							
SW1	PSVII24019T1	PSVII24019T2	IC	1		1 X	



# Service Manual

DIGITAL PROPRIETARY TELEPHONE

**KX-T7436C-B**

(for Canada)

*Supplement-4*

Please file and use this supplement manual together with the service manual for model No. KX-T7436C, KX-T7436C-B Order No.KMS9809312C1.

## **WARNING**

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

**Note:**Supplement-1~3 have already supplied with printed matter. So please refer to that.





# Panasonic

© 2000 Kyushu Matsushita Electric Co., Ltd. All rights reserved. Unauthorized copying and distribution is a violation of law.



# 1 CHANGES

## 1.1. REPLACEMENT PARTS LIST

Reason for Change (Symbol:A) Following 1-8 reasons are indicated on the Notes in the bottom column.		
1. Improve performance		
2. Change of material or dimension		
3. To meet approved specification		
4. Standardization		
5. Addition		
6. Deletion		
7. Correction		
8. Other		
Interchangeability code (Symbol:B) Following V-Z interchangeabilities are indicated on the Notes in the bottom column.		
Parts	Set Production	Description
V Original New	 Early (before change) Late (after change)	Original or new parts may be used in early or late production sets. Use original parts until exhausted, then stock new parts.
W Original New	 Early (before change) Late (after change)	Original parts may be used in early production sets only. New parts may be used in early or late production sets. Use original parts where possible, then stock new parts.
X Original New	 Early (before change) Late (after change)	New parts only may be used in early or late production sets. Stock new parts.
Y Original New	 Early (before change) Late (after change)	Original parts may be used in early production sets only. New parts may be used in late production sets only. Stock both original and new parts.
Z Other		

Ref. No.	Parts No.		Part Name & description	Pcs	Remarks	Notes	Time of change (Suffix)
	Original Part	New part					
ACCESSORIES AND PACKING MATERIALS							
P1	-----	PSPK1695Z	GIFT BOX (Made in Malaysia)	1		5	
MAIN BOARD PARTS							
SW1	PSVII24019T1	PSVII24019T2	IC	1		1	X